The Outcomes of Educational Welfare Officer Contact in England

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Summary

The key purpose of educational welfare officers in England is to support students and parents to maximise educational opportunities for young people. However more is known about their role in relation to school attendance than to relation to pupils' educational outcomes. Using the Longitudinal Survey of Young People in England (LSYPE), this paper investigates the characteristics of teenagers who received educational welfare contact because of their behaviour between 2004 and 2006. With observational data it is often difficult to isolate respondents exposed to a particular intervention or 'treatment', because of non-random allocation. We address this using inverse-probability-weighted regression adjustment (IPWRA) to estimate more accurately the effect of educational welfare contact on outcomes of educational achievement and aspiration. Our findings indicate that young people who had educational welfare contact because of their behaviour were less likely to apply to university, less confident in university acceptance if they applied and had lower odds of achieving five General Certificate of Secondary Education at grades A*-C, the government benchmark for education achievement at age 16. We discuss the limitations we face and implications of these findings for future research.

Key words: *educational welfare officer, treatment effects models, education achievement, aspiration.*

Introduction

Research and policy interest in educational outcomes has grown substantially throughout the post-war era in England and Wales, particularly with respect to addressing educational inequalities. Successive governments have raised the minimum school leaving age and local educational authorities have introduced various support mechanisms to encourage greater participation in education and to improve achievement. Such support mechanisms include the use of teaching assistants and educational welfare officers (EWOs). Generally teaching assistants work with small group of pupils who need extra support to improve literacy and numeracy, while educational welfare officers provide support to families and pupils with behavioural and attendance problems in order to help pupils get the best out of the education system. Previous studies on EWOs have focussed on the specific roles they play, however little is known either about the antecedents of educational welfare contact or the effects of this contact on the young people who receive it. Also, it is not entirely clear if education welfare is targeted to the pupils who most need it.

We contribute to the existing research by providing quantitative evidence on the use of EWOs in England between 2004 and 2006. We provide evidence, without recall bias, from a representative sample of young people, about who receives EWO contact – their socio-demographic characteristics, behaviours and needs – and the impact of receiving this contact on their educational aspirations and achievement. We make use of an advanced statistical method to evaluate these effects, we also contribute to methodological development in the field by comparing our findings with those of other methods more conventionally used.

Our paper addresses three substantive research questions concerning EWO contact with young people in England:

1. What risk-taking behaviours are correlated with EWO contact?

2. What are the characteristics of young people who receive EWO contact ?

3. What effect does EWO contact have on educational aspiration, confidence and achievement?

We begin by looking at the EWO role and the evidence of its efficacy. This is followed by discussion of educational aspiration and attainment, which are our core outcomes of concern. We also consider absenteeism, truancy and risky behaviours, which may trigger EWO contact and affect outcomes. We then explain our methodology. Discussion of our findings considers first the risky behaviours that we find correlated with receiving EWO contact due to behaviour difficulties, and then the impact of this contact on educational aspirations and achievement, comparing these findings with those from using more conventional statistical techniques. Finally we discuss the implications of these findings, along with their limitations,

Background

Education Welfare Officers

The role of EWO was created by the Forster's Education Act (1870) giving local authorities the power to make school attendance compulsory in Britain; the role was further developed by the Education Act 1944, allowing EWOs to provide support to young people and their families to facilitate school attendance. Over the years, those undertaking the role have been known as School Board Officers, Attendance Officers, and Educational Social Workers (Pritchard et al., 1998). But while the name and the role has changed over time, broadly its primary purpose has been to enable all young people to get the best out of the educational system, thereby improving equality of opportunity. More specifically, during the period of interest (2004-2006) the EWO role was to encourage parents to form good relationships with school, to identify attendance problems and

support parents and pupils to resolve them. EWOs have also advised parents on their legal responsibility for their children's enrolment and attendance at school and taken action through magistrates' court if necessary. In addition to attendance issues, EWOs also deal with pupils' behaviour, underachievement, health and general welfare (Reid, 2008), advise on child protection issues and prepared reports on pupils with special educational needs. Furthermore, they have helped families to obtain benefits e.g. free school meals, transport or clothing; made referrals to others such as social services, health professionals or educational psychologists; and arranged alternative education for students who have been excluded from school (Reid, 2006a). In recent years, especially following cuts introduced by the Coalition Government in 2011, EWO provision in England has shrunk, along with other local authority functions, and the role has also become more dispersed. Schools often now employ their own 'attendance officers', and local authorities use education social workers or other services such as home-school liaison officers. Our data are from 2004-6 when the use of local authority EWOs was more mainstream (Reid, 2014).

Reid (2006a) argues that research in this field tends to focus on two aspects of effectiveness of the Education Welfare Service. The first considers whether EWOs have improved school attendance rates, and the second, albeit limited in volume, considers outcomes relating to the wider EWO brief, including educational attainment and the links between non-attendance and special education needs (e.g. Pritchard et al.,1998).

Examining the efficacy of EWOs, Malcolm et al. (2003) found that although teachers appreciated the work done by EWOs, their satisfaction with the frequency and type of contact varied considerably. The authors showed that EWOs were involved with reintegrating non-attenders by adapting timetables, acting as learning mentors, befriending students and implementing collection schemes. Teachers believed student absence was related to poor attainment and around half of the

truants interviewed also believed that it affected their educational progress. This leads us to hypothesise that EWO contact may influence educational achievement and aspiration.

Educational achievement and aspiration

Inequalities in educational achievement are evident from an early age (Goodman & Gregg, 2010). These achievement gaps have a critical effect on educational progression particularly at secondary school. For example, in England only 21% of the poorest quintile compared with 75% of the richest quintile achieve five GCSEs A*-C (Chowdry et al., 2010). Such inequalities are not only found in achievement but also in aspiration (Goodman & Gregg, 2010). The interrelationship between the two is well documented. Frank Fox & Faver (1981, p.439) for example, note: "that which one has already accomplished – achievements – provide the basis for that which one hopes to accomplish – aspirations"; however, they also acknowledge that the reverse causal relationship may also be found. Clearly both types of educational measures, objective achievement and subjective aspiration, are important outcomes to understand when seeking to mitigate educational inequalities.

When considering the causes of educational inequalities, it is helpful to draw on Bronfenbrenner's (1979) ecological model, which addresses the multiple and nested influences on young people's lives. Bronfenbrenner describes individuals' interactions with those closest to them (e.g. parent-child, family, peer relationships) as *proximal* factors, that is, the primary processes for influencing development and behaviour in day-to-day life. These are constrained and influenced by immediate context (e.g. family, school, and neighbourhood); these and more distant social, economic and demographic aspects of their environment are called *distal* factors. So children and young people are at the centre of a set of proximal, then ever extending concentric circles of distal, interacting relationships.

Chowdry et al. (2010) use a decomposition analysis on the Longitudinal Study of Young People in England (LSYPE) data to expose the mix of proximal and distal factors that influence young people's educational achievement. They found that differences in prior educational achievement at ages 11 and 14 explain 60% of the gap in GCSE results between children from rich and poor families. Family characteristics, including parental education and background, account for only 6% of the achievement gap, with differences in parental attitudes explaining 8% and the young person's own attitudes 15%. The authors highlight that expectations for higher education engagement and participation in risky behaviours are among the most important factors to reduce the educational achievement gap.

Absenteeism, truancy and other risky behaviours

The research literature likewise exposes a complex array of proximal and distal factors associated with truancy and absenteeism, which are often the triggers for EWO contact and affect outcomes. Truancy and persistent absenteeism are associated with poverty (Zhang, 2003),with problematic communication between parent and child (McNeal, 1999), and with school exclusion (Bratby, 1998), youth offending (Ball & Connolly, 2000), alcohol consumption (Miller & Plant, 1999) and other problematic attitudes and behaviour (Lewis, 1995). Students who come into contact with EWOs are more likely than their peers to participate in risk-taking behaviours such as heavy smoking (Hibbett & Fogelman, 1990). Furthermore, truancy significantly predicts leaving school at age 16, lower educational outcomes and increased risk of unemployment (Attwood & Croll, 2006), as well as marital and psychological problems in later life (Hibbett & Fogelman, 1990).

Policy interventions for young people who disengage from school tend to concentrate on poverty and associated family conditions such as parenting, educational aspiration and motivation (Smyth & McInerney, 2012). Even before the service cuts introduced since 2011, initiatives to

reduce non-attendance and truancy were having limited success (National Audit Office, 2005), and were hampered by understaffing and lack of resource (SIHE, 2005). Nairn & Higgins (2007) argue that some young people are alienated from the school system and are likely to have been labelled 'troublemakers' as a result of behaviours such as playing truant, talking back to staff, bullying other children or being violent. They suggest that the institutional sanctions implemented as a result of their behaviour may further alienate these young people from school. Slightly more optimistically, Reid (2012) notes that while truancy is caused by combinations of the student's own characteristics, their social and institutional circumstances, it can be resolved through early intervention, individualised curriculum and genuine interest from teachers and EWOs.

Addressing diverse influences on young people's lives

To identify the predictors and the outcomes of EWO contact due to a teenager's problem behaviour, we take into account as far as possible the array of proximal and distal factors associated with educational outcomes, truancy or persistent absenteeism, and/or with the related risky behaviours outlined above. Following Strand's (2011) interpretation of Bronfenbrenner's work in relation to using LSYPE, these influences are divided into four domains: structural, neighbourhood, familial, and individual characteristics. Variables within these domains are used to predict both EWO contact and educational outcomes.

Structural or macro-level factors include parents' social class and family structure. These are known to be associated not only with educational disadvantage, but also with health problems, teenage pregnancy, school exclusion, and anti-social behaviour (Gamoran, 2001; Marmot, 2005; Fish, 2009).

Neighbourhood and community environments, along with peer and school influences, can also affect young people. For example living in disadvantaged neighbourhoods and non-cohesive

communities is influential for mental health and for educational outcomes (Leventhal & Brooks-Gunn, 2000).

In the familial domain, characteristics include the quality of relationships between family members, how parents and carers spend their time with the young person, and their degree of involvement in the young person's life and schooling. Harsh or authoritarian, as well as under-restrictive parental monitoring and control, for example, seem to affect participation in risky behaviours (Brannen et al., 1994; Dodge et al., 1994).

Lastly, the young person's individual characteristics to be considered include ethnicity and gender, as well as behaviours such as drug and alcohol use and violence, which themselves may be associated with general psycho-social problems (Deater-Deckard et al., 1998). All of these factors are likely to influence both the young person's likelihood of having EWO contact and the effect of EWO contact, therefore the modelling technique for the present analysis takes this circularity into account.

Data and Methods

Data

The LSYPE began in 2004 when sample members were aged between 13 and 14. Each year the same young people and their parents are interviewed, resulting in seven waves of data. The present analysis uses waves one to four, as questions about EWO contact are asked at the first three waves and a number of educational outcomes can be measured at the fourth. The LSYPE sample includes young people who attended maintained schools, independent schools and Pupil Referral Units (PRUs) in England (PRUs provide education for children who are excluded on the grounds of their behaviour or are for some other reason unable to attend a mainstream or special school).

Methods

Understanding the effect of exposure to a particular treatment or intervention is at the heart of social science. However some variables of interest cannot be randomly assigned for ethical or logistical reasons therefore we must rely on statistical methods and observational data to estimate an effect. A key problem is that individuals are likely either to have self-selected or been selected by others into receiving any given treatment or intervention – so the allocation is not random. One problem with estimating an effect, and so making a causal inference is that for each individual we can, at most, observe only the treatment that occurred in their case. Holland (1986) refers to this as the fundamental problem of causal inference. The relationship between educational welfare contact and educational outcomes is complicated because the reasons that the individual may need educational welfare contact in the first place may be related, either directly or indirectly, to the grades they achieve and to their educational aspirations.

The statistical technique we employed in this analysis is IPWRA, which takes into account the both the antecedents of the treatment and the effect of the treatment on the outcome. It also estimates a more accurate counterfactual outcome - therefore addressing the fundamental problem of causal inference (Imbens & Wooldridge, 2009). In the discussion to follow, where we specifically refer to IPWRA model, we use the expression 'treatment effect', for purposes of consistency with the model. However, we recognise that use of the medicalised terminology of 'treatment' is commonly considered inappropriate for social interventions (Bottoms & McWilliams, 1979) elsewhere, the terms 'intervention' and 'contact' are used.

The IPWRA estimators, also known as Wooldridge's (2007; 2010) 'double-robust estimators', combine regression adjustment (RA) and inverse probability weighting (IPW). RA uses sample means to estimate treatment effects to predict potential outcomes adjusted for covariates. This means that for each young person we obtain two values: one represents the outcome if they received EWO contact and the other represents the outcome if they did not. From these values

Potential Outcome Means (POM), Average Treatment Effects (ATE) and Average Treatment Effects in the Treated (ATET) are calculated. However if we only used RA we would be unable to disentangle the effects of the treatment and the effects of the other covariates, such as the young person's behaviour or family conditions; therefore we use weights. The weights we apply use the inverse of the probability of being in the observed treatment group which are obtained by fitting a model of treatment status. Then the estimated inverse-probability weights are used to fit the weighted regression models of the outcomes for each treatment level (0/1: no EWO contact/EWO contact) and to obtain the treatment-specific predicted outcomes for each individual. The doubly-robust method combines the estimates of the outcome model of the RA and the treatment modelling strategy of the IPW. In less technical terms, this method makes two groups (treatment and non-treatment) look the same on a number of observed variables that we know from other evidence are likely to be associated with EWO contact and outcomes. The model then weighs these in order to evaluate the average 'causal effects' of a treatment on an outcome. However one main limitation is that we are restricted to the relevant variables observed in the data. Therefore while the IPWRA results are likely to be less biased than the Ordinary Least Square (OLS) and logistic regression results, and we do test this, there may remain issues of internal validity. The variables used to estimate both the treatment and the outcome models are explained below.

Treatment Variable

A binary variable is created from measures at Wave 2 and 3 which ask the main parent (MP) "In the last 12 months, have you been in touch with educational welfare services because of the YP's behaviour at home or at school? This includes both you getting in touch with them and them contacting you?" For the main analysis we use Wave 2 and 3 to measure EWO contact to make use of temporal ordering. We are aware that, in addition to the fact that almost all LSYPE data used her

is by self report, the question about whether the young person has had contact with an EWO as a result of their behaviour is an imperfect one. It concerns only contact due to the young person's behaviour, not for other reasons such as absenteeism alone. It tells us nothing about the nature, intensity or duration of contact, only that, reportedly, it happened. Recall bias may be limited since the recall window is just 12 months, but there may be bias associated with stigma, especially if the contact was unsolicited, or misattribution. We return later to a full discussion of the limitations of data and method and therefore of inferences that can be drawn from our findings.

Dependent variables

The outcome variables used to test the treatment effect of EWO contact include: an objective measure of educational achievement (General Certificate of Secondary Education (GCSE) results), and two subjective measures: the young person's self-reported aspiration for higher education and confidence that they will be accepted if they apply.

Educational achievement is measured by the attainment of five GCSEs at grade A*-C including English and Maths ('five good GCSEs'). GCSEs are formal qualifications in England and Wales, gained through examination towards the end of compulsory schooling at age 16. The GCSE grades are obtained through linkage to the National Pupil Database (NPD). Grades range from A*-G, with grade U (unclassified) signifying failure. GCSE results are particularly important because they determine education progression opportunities including studying the more academic Advanced Levels or vocational qualifications and are therefore linked to status attainment. In addition to the binary measure, a linear measure for GCSE scores is used as a robustness check. In the linear scale a Grade G is allocated 16 points, with an additional six points allocated for each grade improvement. A young person achieving five As will have a linear score of 260 points. The linear measures may

include any points acquired through resits, and do not account for the total number of GCSEs taken, which may differ by school but range between eight and 15 subjects.

Educational aspiration is captured by asking the young person whether they will apply to university and a follow-up question asking whether they believe they will be accepted if they apply. Both measures are coded as dichotomous variables with (1) Yes and (2) No.

Independent variables

All our independent variables come from Wave 1 data, with the exception of social class, which was unavailable at Wave 1 so was taken from Wave 2. In line with Strand (2011) we grouped independent variables into structural, neighbourhood, familial and individual characteristics, for inclusion in the selection model.

Structural factors include family structure and social class (we use Goldthorpe's (1980) class schema which identifies seven distinct categories differentiated by the nature of the job, autonomy and stability). Neighbourhood characteristics include: type of neighbourhood, geographic location and multiple deprivation index (a measure of social and economic deprivation across neighbourhood 'wards' in England). Family factors, from parents' self-report, include: frequency of parents meeting with teachers to address specific problems; parental involvement in school and attendance at parents' evenings; frequency of arguing with the young person; and quality of the parents' relationship with the young person. The young person's individual characteristics included: having special education needs, and self-reported binary measures of whether they consume alcohol, smoke cannabis, smoke cigarettes, play truant, spray graffiti, shoplift, vandalise public property, or participate in violent behaviour.

As the treatment model is a doubly robust estimator, independent variables are also used to control for the outcome variables. For GCSE outcomes, the controls include: parental class

background, parental education, young person's gender and prior educational attainment measured through an average point score at Key Stage 2 (this is a National Curriculum level children aged 7 - 11, requiring the study of 11 subjects including English, Maths and Science). For the models predicting aspiration and confidence in application to university, control variables include: parental education and aspirations for the young person, and the young person's gender and GCSE results.

Missing data

The initial sample for LSYPE was 15,770 children from 658 schools. By Wave 4, sample attrition was roughly 27%. Longitudinal weights are applied as recommended by Piesse & Kalton (2009). Observations are included in the analytic models when the dependent variable response is complete. Some independent variables also suffer from item non-response; so to maximise the number of cases in the analysis, dummy variables were constructed to identify where the information was missing but not reported in tables. The advantages of this approach include avoiding loss of statistical power due to a reduced sample, and capitalising on information present on other variables. This approach has been criticised by Allison (2002) as it produces biased estimates of the coefficients. He nonetheless suggests that the dummy variable adjustment is optimal in the situation when the question concerned has no relevance to the respondent, as was true in this case.

Results

The absolute chance of young people receiving EWO contact at any wave is 8% (1,321 of 14,794) and of those 707 are reported at Wave 1, 547 are reported at Wave 2 and 426 at Wave 3. Some young people had EWO contact over multiple waves, as discussed below.

[Figure 1 here]

The results in Figure 1 identify the GCSE attainment by frequency of EWO contact across waves. Those with no EWO contact achieve a mean GCSE score of 394, while those with EWO contact once over three waves have a mean score of 257, those with EWO contact twice have 168 and those who report it at every wave have a mean score of 109. Figure 2 shows a negative, almost linear, relationship between GCSE attainment and frequency of playing truant. Those who never play truant have a mean GCSE score of 404, those who have done so once have a lower score of 366. This drops to 320 for those playing truant twice over three waves, while persistently truanting across the waves have the lowest score of 287.

[Figure 2 here]

What risk-taking behaviours are correlated with EWO contact?

Table 1 presents the tetrachoric correlations between s whether the young person has received an EWO intervention at all (Y) and selected independent variables including: whether they have truanted, drunk alcohol, smoked cigarettes, smoked cannabis, sprayed graffiti, vandalised public property, shoplifted or fought with others (measured at Wave 1). Tetrachoric correlation enables us to estimate multivariate relationships between dichotomous variables

All risk-taking behaviours are significantly correlated with EWO contact ($p<0.01$), with the correlation ranging from the moderate 0.32 in the case of spraying graffiti to a stronger 0.43 for playing truant, and 0.41 for smoking cigarettes.

[Table 1]

Our findings show that these risk-taking behaviours are not practised independently of each other. The 0.69 correlation between fighting and vandalism is strong; so too is that between vandalism and spraying graffiti, at 0.68. The correlation between spraying graffiti and drinking alcohol is moderate, at 0.32. We can also see a relatively strong correlation, 0.52, between smoking cigarettes and smoking cannabis.

What are the characteristics of young people who receive EWO contact in England?

The results from the logistic regression in Table 2 show the odds ratios for predicting EWO contact. We can see that class background significantly predicts EWO contact: with reference to higher service class (i.e. parents with executive, managerial and professional occupations), young people from all other social class origins have significantly higher odds of EWO contact, with the highest odds, 3.09, for unemployed parents. Parental involvement in the young person's schooling also matters. Parents' attendance at meetings specially arranged to address a problem is associated with an increase in odds of 2.28 of having educational welfare contact relative to those who don't attend these meetings. If parents report being not very involved in school, they have lower odds of having EWO contact and if they do not attend regularly scheduled parents' evenings the odds increase by 2.16. Family argument also makes a difference: compared with parents who hardly ever argue with the young person, those who do so most days have significantly higher odds of 1.91, while never arguing yields significantly lower odds of 0.25. Young people with special education needs have higher odds of 2.14 of having EWO contact compared to those who have none. In addition, the odds of contact significantly increases if the young person reports smoking cannabis or cigarettes, playing truant, or fighting compared to those who do not. These findings confirm that EWO contact is associated not just with young people's risk-taking behaviours, but with certain

other factors including their social class background, relationship with parents, and parents' engagement with the school.

[Table 2 here]

What effect does EWO contact have on educational aspiration, confidence and achievement?

Turning to treatment effects, Model 1 in Table 3 estimates the treatment effects of EWO contact on the linear GCSE score outcome. The average treatment effect (ATE) on the population had they all had EWO contact is -62.49 points, while the average treatment effect on the treated (ATET) is -73.36. The difference between the ATE and ATET reflects the dissimilarity between the populations, e.g. those who *actually* receive EWO contact and those who we statistically impose receipt of EWO contact to. The ATET coefficient is equivalent to a reduction of one whole GCSE at A* grade, or one grade lower for nine GCSEs (e.g. achieving nine Ds instead of nine Cs) compared to someone without EWO contact. Both the ATE and ATET coefficients indicate that EWO contact is not associated with GCSE improvement. However it should be noted that while the average effect is negative, it is also likely that some individual young people may see positive effects of this contact.

[Table 3 here]

The GCSE linear metric can be quite imprecise as it can include resits and some schools allows young people to take more GCSEs than others. So we performed a robustness check on the effect of EWO contact using a binary measure of achieving five GCSEs A*-C (a standard prerequisite for future study and a government benchmark for academic achievement). The results are shown in Model 2, Table 3. The ATE on the whole population is 0.88, meaning that had they all

received EWO contact their odds of achieving good GCSE results would be significantly lower. The ATET is 0.90, meaning that for young people in the sample who a received EWO contact the odds of achieving good GCSE results are significantly lower than for those who do not.

In summary, our treatment models estimating the effect of EWO contact on GCSE results show a negative educational attainment outcome on aggregate. This result is robust for both the treated and the counterfactual population.

Turning to the likelihood of aspiring to apply to university, the results shown in Model 3, Table 3 indicate that there is a significant difference between young people who receive EWO contact (odds ratio 0.95 for the ATET) and those who do not (odds ratio of 1). The odds for the ATE are 0.93, which shows that had the entire population received the EWO contact they would be less likely to aspire to university.

The results in Model 4, Table 3 indicate that there is also a significant difference between young people who receive EWO contact and those who do not in their belief that they will be accepted if they apply. The odds ratios are 0.92 for the ATET and 0.93 for the ATE.

We repeated the analysis using the more commonly deployed OLS regression and logistic regression to identify how IPWRA compares. Results are summarised in Table 4. Model 1 shows that EWO contact is associated with a reduction in GCSE attainment by -95.27, suggesting an overestimation of the effect of EWO contact by around one third. Similarly the logistic regressions in Models 2 - 4 all over-estimate the effect of EWO contact. The odds ratio for achieving good GCSE results is 0.34 (Model 2), the association between EWO contact and aspiration to apply to university is 0.49 (Model 3), and there are lower odds (0.44) of the young person having confidence in that they would be accepted by university if they applied (Model 4).

[Table 4 here]

Discussion

Our primary purpose has been to examine whether s contact with EWOs as a result of the young person's behaviour improve their educational attainment, aspiration and confidence outcomes. For EWO contact to be deemed successful in these terms, we would expect to see an improvement for both the counterfactual (the ATE) *and* for the (treated) students who received EWO contact (ATET). If the contact were unsuccessful we would expect to see a poorer outcomes both for the counterfactual and for those who received contact. If there were no difference between the treated and untreated, we would see an insignificant result, indicating that EWO contact has no impact on these outcomes.

We find that students' educational achievement, university aspirations and confidence in being accepted if they apply are lower for those who have contact with EWOs. This finding is robust after taking into account their gender, prior attainment, parental educational and class background. We also obtained robust results for the treatment model which took into account the conditions which predict EWO contact – namely special educational needs, risky behaviours and involvement of and relationship with parents. These findings hold true when calculated for the treated sample, and counterfactually for the whole population.

However when seeking to interpret these findings, it is essential that we are mindful of several inherent limitations to the data and the inferences that may be drawn. In the UK, datasets such as LSYPE provide us with the best opportunity we have to investigate longitudinally and without retrospective bias the predictors and outcomes of EWO contact, comparing those receiving contact with those who do not. But as we have acknowledged, there are drawbacks, not least that most of the data (excepting GCSE scores) are self-reported. When examining sensitive issues such as risky behaviour (e.g. taking drugs) or EWO contact, there is no way to validate recall accuracy or

truthfulness, especially if respondents are sensitive to social stigma. The work of methodologists such as Murray & Perry (1987) shows that reporting veracity can be improved with assurances of confidentiality and anonymity, both of which were given to LSYPE participants. Nonetheless, we acknowledge that many cases may have gone unreported for these reasons. Though the recall window is relatively short (12 months), perceived stigma may well have led to under-reporting.

Second, the key parent-reported measure of EWO contact is also relatively blunt - it is a binary measure, telling us only whether or not contact is reported within any one year. The dataset does not capture variation in the nature, extent or quality of contact and this may well confound the results. Not only will those having EWO contact be a heterogeneous group, from diverse backgrounds and with varied and challenging needs, but this complexity is compounded by the fact that their experiences of EWOs will be diverse. Some, for example, may have received a prolonged, specialised intervention with in-depth involvement between the EWO, the young person and their family, while others may have had just a one-off conversation or an occasional phone call. Contact may have been voluntary for some, involuntary and unwelcome for others. While the intended ethos is to work in partnership, EWO contact may also necessitate sanctions and statutory action against parents. None of these variations is visible from LSYPE data, nor indeed from any other existing longitudinal dataset.

A third limitation is that the LSYPE question about EWO contact does not ask about contact in the absence of behaviour problems, for example for children who do not attend school because of chronic social anxiety, but have otherwise pro-social behaviour. This said, there is also scope for misattribution here: parents responding to the question may have fastened their attention on the contact rather than the trigger, or they may have treated their child's anxiety as 'behaviour'.

Fourth, while we are confident that the outcome measures selected are entirely appropriate to the purpose of EWO contact, it may be that more modest achievements such as enabling a young

person to stay in mainstream schooling or in school at all, would be more realistic achievements to consider. There may also be proximal benefits of EWO contact that are hidden, including benefits for those students who do not have EWO contact but who share the same learning and social environment and at school, or the same family environment at home. Furthermore, if EWOs concentrate their efforts on students with extreme negative externalising behaviours, then teachers and school leaders may be better able to concentrate their resources on the student group as a whole. The involvement of EWOs might also reduce the stress on teachers and school leaders.

One final limitation of the data is that there may be unobserved characteristics that are not captured within LSYPE that drive students' behaviour, their likelihood of receiving EWO contact and their educational outcomes. For example, students' orientation towards authority and school culture is not explicitly captured or modelled. Particularly important, more severe adversities, such as abuse or neglect, would be likely to affect behaviour, the chances of receiving EWO contact and educational outcomes, but are not captured.

It is clear that better and more fine-grained data may well improve our understanding of the nature of EWO contact, its predictors and outcomes. We have also acknowledged in full the challenges of making causal inferences from observational data. This in part because only that which is observed can be analysed, and in part because assignment to EWO contact is non-random and the factors making contact more likely are themselves also likely to affect outcomes (Winship & Morgan, 1999). New methods such as the IPWRA seek to address these challenges. Nonetheless, limitations remain in that unobserved variables may influence both the selection into treatment and the outcomes. We have done our best to mitigate these, and on the basis of the data we have it is clear that IPWRA is a more efficient estimation method compared with the more traditional approaches using OLS and logistic regressions, which overestimate the negative effect of EWO contact.

Notwithstanding these limitations, there appears to be some negative relationship between EWO contact and educational outcomes for young people. Previous research finds a similarly negative association between having teaching assistant support and student attainment (Blatchford et al. 2009). One explanation for this relationship is that students may become less independent as a result of their reliance on teaching assistants (Blatchford et al. 2009). It is possible that a similar mechanism is at play with respect to EWOs. Students' increased reliance on others such as EWOs may actually reduce their educational resilience. Better data and further investigation are needed to explore this in more depth.

There is a particular need too for research which reflects the more current educational policy and service contexts when evaluating the efficacy of support to young people to improve their educational opportunities and success. As discussed by Reid (2006b; 2010; 2014) the education welfare service has experienced a disproportionate number of cuts as well as an increase in workloads due to rising numbers of potentially disengaged students, an increase in administrative responsibility and more complex tasks. Furthermore service provision has been made more complex due to an increase in the number of alternative professional services and the decentralisation of responsibility.

Conclusion

We find evidence that young people's risk-taking behaviours are correlated with EWO contact and that factors contributing to participation in these risk-taking behaviours are interrelated. Furthermore there are higher odds of EWO contact for young people from lower social class backgrounds, those with special education needs, strained relationships with parents, and those whose parents are less engaged routinely with school but more commonly attend specially convened meetings to deal with problems. Examination of the effect of EWO contact on young people's

educational outcomes using observational data yielded some interesting results. Our findings indicate that those who receive EWO contact have significantly lower odds of achieving good GCSEs; they also have lower odds of aspiring to apply to university, and of confidence and belief that they would be accepted if they apply.

These results show that EWO contact in relation to their behaviour is influential on the young person's life chances, although perhaps not in the manner that we might expect or hope. Using the IPWRA modelling strategy in fact reduces any overestimation of these effects when compared with more traditional analytical techniques.

We acknowledge it is essential we are cautious when interpreting these findings – both the limitations of the LSYPE dataset itself and the challenges of making causal inferences from observational data are fully acknowledged. Despite these caveats, we are confident that our analysis is the only one of its type, taking one of the best opportunities currently available, to investigate the predictors and outcomes of EWO contact, comparing those receiving it with those who do not.

As they stand, our findings about the outcomes of EWO contact may be counter-intuitive and disappointing. They do not appear to support the hypothesis that education welfare services improve educational opportunities as intended, albeit that the outcome thresholds we consider may be high and the very fact that students receiving EWO contact remain in school and sit GCSE examinations may itself be a marker of success. However, our overriding conclusion is that better data and further research are needed to ascertain whether what appear to be negative effects of EWO contact are borne out, and if so what factors may ameliorate these outcomes. The issue needs also to be explored in current contexts, to see how contemporary services aiming to improve educational opportunities can best serve the young people most needing their support.

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Table 1. Tetrachoric correlation between risky behaviours and educational welfare contact

Variables	Y	X1	X2	X3	X4	X5	X6	X7
X1 Truant	0.43*							
X2 Alcohol	0.20*	0.40*						
X3 Cigarettes	0.41*	0.63*	0.60*					
X4 Cannabis	0.37*	0.63*	0.65*	0.76*				
X5 Graffiti	0.32*	0.55*	0.32*	0.49*	0.55*			
X6 Vandalism	0.30*	0.59*	0.42*	0.48*	0.57*	0.68*		
X7 Shoplift	0.29*	059*	0.41*	0.51*	0.54*	0.54*	0.62*	
X8 Fighting	0.33*	0.56*	0.36*	0.50*	0.56*	0.61*	0.69*	0.54*

Notes: Y= Education Welfare Contact, 0/1. *p<0.01

Figure 1. Mean Linear GCSE Score by Educational Welfare Contact
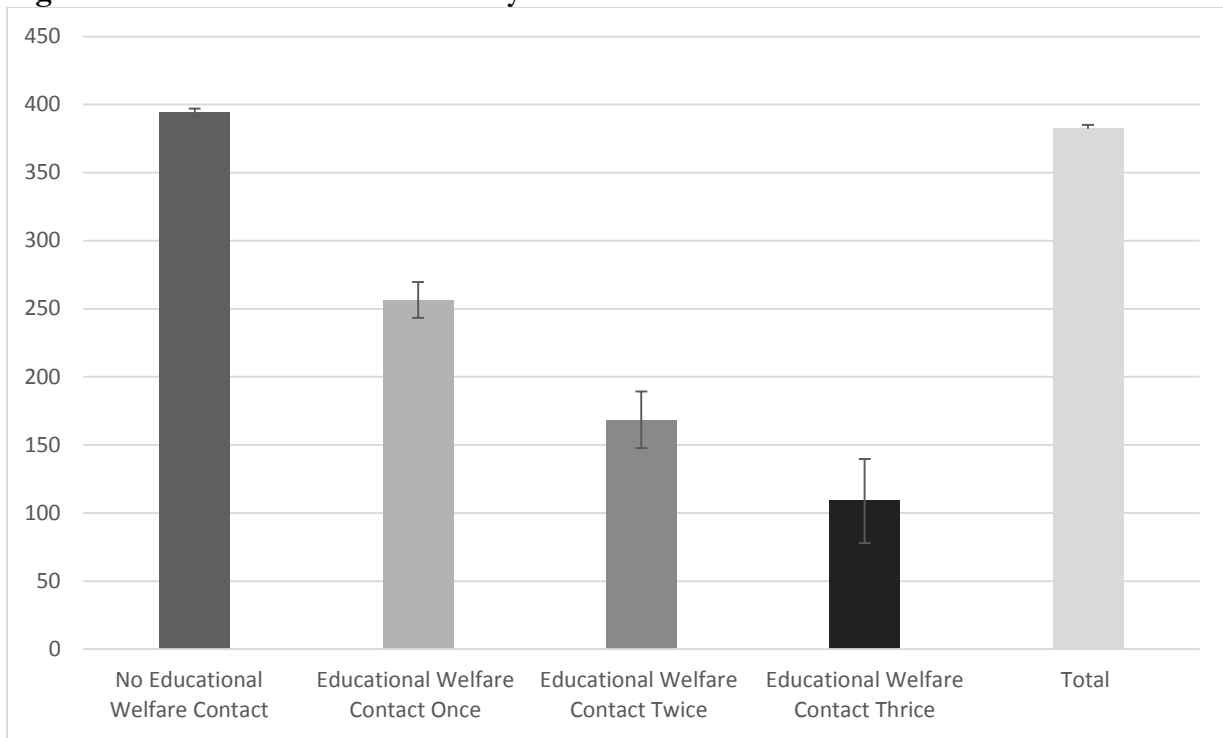

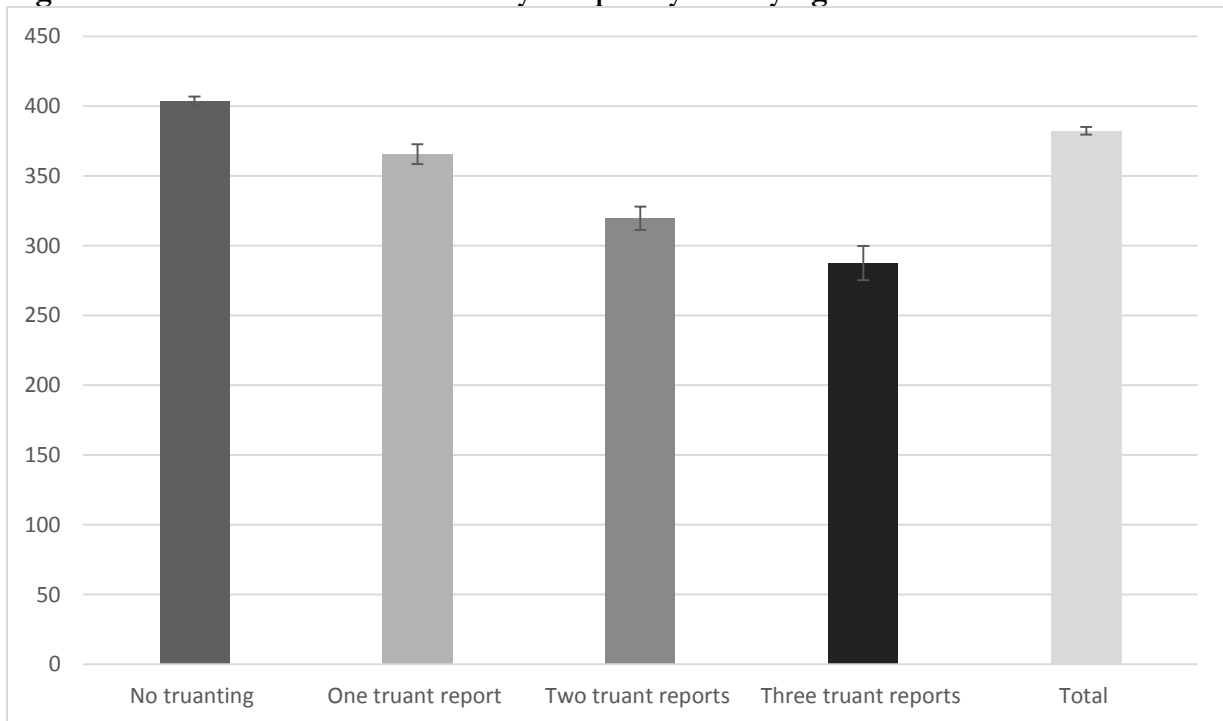**Figure 2. Mean Linear GCSE Score by Frequency of Playing Truant**

Table 2. Logistic Regression of Selection into Educational Welfare Officer Contact Equation

Variables: Reference Category	Dummy Variables	OR	SE
Class: Higher Service			
	Lower Service	1.77**	(0.39)
	Routine non manual	1.98*	(0.54)
	Small proprietors	1.76*	(0.49)
	Technical and Supervisors	1.81*	(0.44)
	Semi Routine	2.55***	(0.59)
	Routine	2.31***	(0.55)
	Unemployed	3.09***	(0.68)
Teacher's meeting: Do not attend specially arranged meetings			
	Parents attended specially arranged meetings	2.28***	(0.20)
Parent's involvement in YP's Schooling: Very involved			
	Fairly involved	0.87	(0.09)
	Not very involved	0.77*	(0.10)
	Not at all involved	1.08	(0.21)
Frequency of arguing with YP: Hardly ever			
	Most days	1.91***	(0.26)
	More than once a week	1.77***	(0.22)
	Less than once a week	1.21	(0.16)
	Never	0.25**	(0.11)
Parents evening: Attended			
	Parents did not attend parents' evening	2.16***	(0.25)
No special education needs			
	Special education needs	2.14***	(0.24)
Cannabis: has not smoked cannabis			
	Smoked cannabis	1.52***	(0.17)
Cigarettes: has not smoked cigarettes			
	Smoked cigarettes	1.86***	(0.20)
Truant: Has not played truant			
	Played truant	2.23***	(0.23)
Fighting: Whether fought or taken part in public disturbance			
	Fought	1.42***	(0.15)
Observations		10,328	

Also controlling for step family status; the young person's relationship with parents; alcohol consumption; graffiti; vandalism and shoplifting.

Notes: OR = Odds Ratios, SE = Standard Error, YP = Young Person. *,**,*** denotes significance at $p<.05$, $p<.01$ and $p<.001$ respectively.

Table 3. Inverse Probability Weighted Regression Adjusted (IPWRA) Results

Model 1: Linear GCSE score			Model 2: Five GCSEs A*-C (inc English & Maths)		
Reference Category: No educational welfare contact			Reference Category: No educational welfare contact		
	β	SE		OR	SE
Educational Welfare Officer Contact ATE	-62.49***	(7.20)	Educational Welfare Officer Contact ATE	0.88***	(0.03)
Educational Welfare Officer Contact ATET	-73.36***	(5.38)	Educational Welfare Officer Contact ATET	0.90***	(0.01)
Observations	10,328		Observations	10,328	

Model 3: Likely to apply to University			Model 4: Likely to be accepted if apply to University		
Reference Category: No educational welfare contact			Reference Category: No educational welfare contact		
	OR	SE		OR	SE
Educational Welfare Officer Contact ATE	0.93**	(0.02)	Educational Welfare Officer Contact ATE	0.93**	(0.02)
Educational Welfare Officer Contact ATET	0.95**	(0.02)	Educational Welfare Officer Contact ATE	0.92**	(0.02)
Observations	10,328		Observations	8,900	

Model 1: OLS linear coefficients; Models 2-4: odds ratios are presented. All models include controls for structural, neighbourhood, familial and individual characteristics. SE = standard error, OR = odds ratio, ** and *** denote statistical significance at $p<.01$ and $p<.001$.

Table 4. OLS and Logistic Regression Predicting Outcomes by EWO Contact

	OLS GCSE score		Logistic Regression 5 A*-C GCSEs		Logistic Regression Aspire to University		Logistic Regression Confidence in being accepted	
	β	SE	OR	SE	OR	SE	OR	SE
Educational Welfare Officer Contact	-95.27***	(5.17)	0.34***	(0.04)	0.49***	(0.05)	0.44***	(0.06)
Constant	510.85***	(4.26)	5.36***	(0.41)	14.31***	(1.23)	51.07***	(6.99)
Log Likelihood	-		-6918.68		-6442.74		-3132.86	
R2/Pseudo R2	0.33		0.17		0.14		0.12	
Number of observations	10,328		10,328		10,328		8,900	

All models include controls for structural, neighbourhood, familial and individual characteristics.
SE = standard error, OR = odds ratio, *** denotes significance at $p<.001$.