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The effects of social service contact on teenagers in England

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Abstract

Objective

This study investigated outcomes of social service contact during teenage years.

Methods

Secondary analysis was conducted of the Longitudinal Survey of Young People in England (n=15,770), using data on reported contact with social services resulting from teenagers' behavior. Outcomes considered were educational achievement and aspiration, mental health, and locus of control. Inverse-probability-weighted regression adjustment was used to estimate effect of social service contact.

Results

There was no significant difference between those who received social service contact and those who did not for mental health outcome or aspiration to apply to university. Those with contact had lower odds of achieving good exam results or of being confident in university acceptance if sought. Results for locus of control were mixed.

Conclusions

Attention is needed to the role of social services in supporting the education of young people in difficulty. Further research is needed on the outcomes of social services contact.

Introduction

Successive governments in the United Kingdom have long been concerned with improving the quality of life of children and families, particularly those who experience adversity and vulnerability (Morris, White, & Featherstone, 2013). As such, a number of social services resources and interventions have been made available to promote social justice and provide support for these families. However, the effectiveness of these interventions is imperfectly understood, because previous social work research in the UK has tended to use small-scale qualitative studies and to examine only those who receive social service contact without comparison to a control group (McCambridge, Waissbein, Forrester, & Strang, 2007). We contribute to the research evidence base by identifying the predictors and effects of social service contact on teenagers using a longitudinal nationally representative dataset. More specifically, we seek to offer an empirical answer to the question ‘what effect does social service contact have on a young person?’ when the social service contact in question, as reported by a parent, has been in relation to the young person’s behavior. We examine specific outcomes for the young person, namely mental health, educational achievement and aspiration, and locus of control.

To understand the predictors of social service contact and the impact of this contact is important because it enables policy makers to identify and target economic and social resources more appropriately. In addition, it enables social services to examine more critically the nature of interventions that they provide to their service users. Teenagers in particular are an interesting group of service users to examine because their behavior will influence life outcomes such as educational attainment, which in turn influences employability and wellbeing. Teenagers in

adversity or presenting with problem behavior are not always considered ‘at risk’ in the same way as younger children. Instead they are considered by some to be autonomous, responsible for their own actions and their behavior therefore ‘risky’ to society (Sharland, 2006). Understanding social service intervention at this key life stage is important because the societal, as well as the individual, influence of a ‘successful intervention’ is potentially far-reaching.

One of the reasons for the paucity of previous large-scale evaluative studies of social service intervention in England is the perceived lack of suitable data. In England the quality of administrative social services data is variable and there is very little linkage to other data sets. Therefore we turn to a national cohort study, the Longitudinal Study of Young People in England (LSYPE). We build on previous research from Sweden (e.g. Vinnerljung, Hjern, & Lindblad, 2006; Vinnerljung, Sundell, Andree-Loftholm, & Humlesjo, 2006; Franzén, Vinnerljung, & Hjern, 2008) which uses general population cohort studies to examine risk factors and longer term outcomes for users of social services (including child welfare and child protection). We advance their methods by adopting inverse-probability-weighted regression adjustment (IPWRA), a statistical approach developed by Wooldridge (2007; 2010) but rarely used in the social sciences. While traditional regression analyses, such as Ordinary Least Squares (OLS) regression and logistic regression, identify associative relationships only, IPWRA facilitates research which isolates the effects of an exposure, as the technique adjusts both for the predictors of intervention and for the effects of these predictors (Imbens and Wooldridge, 2009).

Background

Social Services in England

The term *social services* refers to the *statutory* social work function, provided through local government organizations ('councils' or 'local authorities') in England. By 'statutory' we mean child welfare and child protection practice where social workers are mandated with legal powers and duties on behalf of the state. Local authority social services employ both professionally qualified staff with the job title 'social worker', and unqualified social work assistants and support workers. The term social services has fallen into disuse in England in recent years (although not in other parts of the UK). Since the Children Act 2004 formally separated provision of social welfare services for children and adults, the contemporary equivalent term in England has become 'children's social care' departments. However 'social services' is used throughout this paper because the cohort study data and parent-report questionnaire on which they are based refer to this specific term, which was in more common usage at the time the survey data were collected. Social services:

- assess children and families and provide services to those with high levels of need or risk;
- provide services to disabled children;
- provide fostering, respite care, residential care and adoption;
- and provide services to children and young people leaving care (Jütte, Bentley, Miller, & Jetha, 2014).

Any of these services could be relevant to young people's behavior. Common scenarios include parents contacting social services because they cannot cope with their children's behavior and teachers or other professionals contacting social services because they are concerned that troubling behavior could be linked to problems in the family, or to other indicators of risk. Social services contact may be limited to one or two encounters, in person or remotely, in order to exchange information, offer advice, or refer elsewhere. If considered necessary, it may

include an initial assessment which in turn may lead to further intervention. These processes may involve social workers conducting home visits, discussing the young person's behavior with various family members, and possibly with teachers. They may involve liaison with other services and referral of young people for relevant specialist help, according to the particular character of their problems – for example, constructive leisure activities or counseling on drug or alcohol misuse. A parenting intervention may be recommended. At higher levels of concern, these options are likely to be accompanied by progression to a multi-agency core assessment of need or risk. If problems are severe, or the risk of harm looks significant, the child or young person may become the subject of formal child protection process. If problems cannot be mitigated at home there may be resort to alternative accommodation such as kinship, foster or residential care, and there may be recourse to the courts. However a placement in public care is relatively uncommon, and a substantial minority of the children of all ages who encounter social services receive only minimal contact (Department for Education, 2008).

In practice there are wide variations in rates and pattern of progression of cases beyond initial contact, which cannot be explained by varying levels of need or risk alone (HM Government, 2009) and point to the complex influences on social work decision-making in diverse contexts (Munro, 2011). Some disparities are associated with social inequalities in access to welfare services (Bywaters, Brady, Sparks & Bos, 2014; Davies & Ward, 2012).

The Effect of Social Service Contact

Most evaluative research in social work is focused on specific interventions, often based on reasonably well-articulated theories of change. A typical issue of *Research on Social Work Practice* would probably include papers presenting the results of such evaluations, perhaps using

experimental and quasi-experimental designs. Less common are evaluations of routine social services interventions, such as home visits by social workers to assess family situations and provide support. Such evaluation is very important for public policy but also presents a number of challenges. It is not possible to isolate the effect of a specific intervention because a range of different tasks are carried out with service users on an individualized basis. The randomization of the intervention – contact with state social services - within a controlled trial would probably be resisted for ethical and logistic reasons. Administrative data provide some opportunity for evaluation, but in the absence of data linkage, this approach does not allow direct comparison with the broader population who do not receive social service contact. General population cohort studies, however, allow for direct comparison between social work service users and the rest of the population.

There are further reasons why evaluating the effectiveness of social service contact is challenging. Firstly, the role of social services is not straightforward, for example they seek to encourage autonomy while also building reliance. Secondly, the degree of influence we might expect social services to have on a service user's life is unclear, as there may be many unintended as well as intended consequences of the support that they provide. Thirdly, the selection of appropriate outcomes to evaluate the intervention against is complex because although the intervention may have been deemed successful in terms of their objectives being achieved, it may be that the objectives or outcomes are trivial, inappropriate, or misconceived (Cheetham, Fuller, McIvor & Petch, 1992).

Previous European studies have used whole population cohort studies to assess life chances of young people who have been in contact with social services by examining negative outcomes in early adulthood, including the prevalence of teenage parenthood, criminal offences,

psychiatric diagnoses and self-support problems (Vinnerljung, Sundell, Andree Loftholm, & Humlesjo, 2006) and suicide attempts (Vinnerljung, Hjern, & Lindblad, 2006). Rather than examining these extreme and negative outcomes, we take the opportunity to examine the effect of social service contact on indicators of life chances, well-being, and resilience. These include the effect on the young person's educational achievement, their aspiration to and confidence in attaining university education, mental health, and locus of control - that is, the extent to which they feel they have control over their life. These outcomes are also important because they are indicative of life stage transitions and enable us to understand the challenges that teenagers in England face. Furthermore these outcomes are in line with the policy ambition for social services and related agencies in England and Wales at the time when young people were recruited to this cohort study which, in addition to safeguarding children and young people, was to promote their health, wellbeing, and life chances (Department for Education, 2003).

This research paper is distinct in a number of ways: there are relatively few quantitative studies in England which examine social services (McCambridge, Waissbein, Forrester, & Strang, 2007); we make use of a nationally representative, systematically collected data set which includes a control group, making it generalizable to the population; furthermore we adopt an innovative technique, IPWRA, which has previously been used in epidemiology but little in social sciences to identify outcomes of a particular intervention; and we aim to disseminate these findings for practitioners of social work.

Influences on Young People's Behavior

Young people may have contact with social services as a result of their behavior for a number of reasons, for example: truancy, poor behavior in class, being in trouble with the police,

or alcohol/drug use. However, these externalizing behaviors may be symptomatic of challenging life circumstances such as family conflict or family adversity (McCulloch, Wiggins, Joshi, & Sanchdev, 2006) or other social influences (Sharland, 2006). To conceptualize this, we use Bronfenbrenner's (1977; 1979) ecological model which describes the multiple and nested influences on children and young people. 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 behavior in day-to-day life. These are constrained and influenced by immediate context (e.g. family, school, and neighborhood): these more distant social, economic and demographic aspects of their environment are called *distal* factors. So children and young people are at the center of a set of proximal, then ever extending concentric circles of distal, interacting relationships.

Drawing on this framework enables us to consider the influences of young people's problem behavior. Following Strand's (2011) interpretation of Bronfenbrenner's work, these influences are divided here into four domains: structural, neighborhood, familial, and individual characteristics. Variables within these domains are used to predict selection into the intervention group, that is, teenagers who have social service contact. Each broad domain is discussed briefly below.

Structural or macro-level factors which influence young people include parents' social class, education, entitlement to free school meals (due to parents receiving welfare benefits), household tenure, and family structure. All relate to the social circumstances of the young person's family and are known to be associated with educational disadvantage, health problems, teenage pregnancy, school exclusion, and anti-social behavior (Gamoran, 2001; Marmot, 2005; Coleman & Hendry, 1999; Fish, 2009). Other structural factors that are linked to problem

behaviors in young people include living in non-traditional families and having young parents (Duncan, Brooks-Gunn, & Klebanov, 1994; Williams, Anderson, McGee, & Silva, 1990).

The next domain level, neighborhood and community environments, along with peer and school influences, can also affect young people, over and above the social circumstances of their families. Absence of supportive peer and teacher relationships and community support networks, for example, are all important for developing externalizing problems (Rutter & Garnezy, 1983; Werner, 1995). Furthermore living in disadvantaged neighborhoods and non-cohesive communities is influential for mental health in general and for educational outcomes (Levant & Brooks-Gunn, 2000).

Moving to the familial domain, the relational characteristics of families are known to affect young people. These 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, seems to affect participation in risky behaviors (Brannen, Dodd, Oakley, & Storey, 1994; Dodge, Pettit, & Bates, 1994), while concerted cultivation of children seems to affect educational outcomes (Henderson, 2013). Other childcare practices, such as lack of warmth and father involvement, are also associated with risky behaviors (Bates et al., 1994; Phares, 1993). Psycho-social functioning more generally is known to be linked to the environment within families (Repetti, Taylor, & Seeman, 2002).

Lastly, individual characteristics of the young person also need to be considered. These include ethnicity and gender, as well as specific behaviors, such as drug and alcohol use and violence, which may be associated with more general psycho-social problems (Newcomb & Bentler, 1988; Deater-Deckard, Dodge, Bates, & Pettit, 1998).

These structural, neighborhood, familial, and individual characteristics are likely to influence both the young person's likelihood of having social service contact as well as the effect of social service contact, therefore the modeling technique must take this circularity into account.

Hypotheses

The paper's main aim is to examine the outcomes for young people of social services contact, taking account both of the characteristics that predict this contact and the characteristics which predict the outcomes in question. The hypotheses are as follows:

- H1 Social service contact increases the odds of achieving the UK Government benchmark qualifications at age 16*
- H2 Social service contact increases the odds of reporting educational aspiration and confidence*
- H3 Social service contact reduces the odds of reporting mental health issues at age 17*
- H4 Social service contact reduces the odds of reporting external locus of control*

Data and Methods

Data

The Longitudinal Study of Young People in England (LSYPE) began in 2004 when the sample members were aged between 13 and 14. Respondents were selected to be representative of young people in England using a stratified random sample, with disproportionate sampling for deprived schools. Schools were the primary sampling units, then children within schools. The

LSYPE sample includes young people in England who attended maintained schools (publicly-funded and free to attend), independent schools (private and fee-paying schools), and Pupil Referral Units (for children who are excluded on the grounds of their behavior or are for some other reason unable to attend a mainstream or special school). The two-stage sampling design that LYSPE uses presents a possible clustering effect due to between-school differences; therefore all models in this paper are adjusted for 654 school clusters. Multilevel models would serve the same purpose as adjusting for robust cluster variance around schools, but such an approach is not necessary as this study neither specifically addresses school differences nor uses school difference explanations to elucidate substantive findings.

Each year the same young people and their parents were interviewed, resulting in seven waves of data. For the purpose of this analysis, Waves 1 – 4 are used. Independent variables are taken from Wave 1, the intervention (social services contact in the last 12 months) is measured at Wave 2 and 3, and the outcome variables are taken from Wave 3 and Wave 4. This means that we are taking advantage of the longitudinal composition of the data and accounting for temporal order. The collection times for Wave 1 occurred between March and October 2004, Wave 2 data were collected between April - September 2005, Wave 3 data were collected between April - September 2006, and Wave 4 data between June – October 2007. To our knowledge these questions relating to contact with social services have not been used in previous research.

Empirical Strategy

The method used in this paper forms part of the counterfactual framework developed by Rubin (1974) which sought to define causation in both observational and experimental studies. The ‘fundamental problem of causal inference’ is that we can at most observe one outcome,

because each individual can only be exposed to one level of intervention (Holland, 1986). In other words, we cannot observe the counterfactual – what would have happened had they been exposed to another level. In order to test the causal effects of social service contact we employ an advanced statistical method named ‘treatment effects’ which has been used in economics and epidemiology but is relatively new to social science and is fully explained by Xie, Brand, & Jann (2012). We obtain the doubly-robust inverse-probability-weighted regression-adjusted results (IPWRA), which combine weighting and a regression estimator (Imbens & Wooldridge, 2009). IPWRA seeks to overcome the fundamental problem of causal inference by identifying the effect of a particular intervention, in this case social service contact, through directly identifying the true value of the intervention and a counterfactual estimation. Other examples of interventions used in previous studies include medical treatment or participation in job training program as described by Wooldridge (2010). Whilst acknowledging some have argued against using medicalized language of ‘treatment’ for social interventions (Bottoms & McWilliams, 1979), this term, along with the phrase ‘treatment effect’, is used where specifically referring to the model, for purposes of consistency with the terminology of IPWRA. 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 value represents the outcome if they received a social service contact and the other value represents the outcome if they did not receive social service contact. These values can be used to calculate the Potential Outcome Means (POM), Average Treatment Effects (ATE) and Average Treatment Effects in

the Treated (ATET). 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 behavior 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. For example if the weight for an observed individual is 1/4 then this person's data represents information from four members of the population. Then the estimated inverse-probability weights are used to fit the weighted regression models of the outcomes for each treatment level (0/1: no social service contact/social service 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 modeling strategy of the IPW. The double-robust properties mean that predictors for both the treatment and the outcomes are allowed. The variables used to estimate both the treatment and the outcome models are explained below.

This modeling strategy enables us to calculate the ATE in the population, that is to say the effect we would have observed had the entire population had social service contact, for example if the treatment were randomly assigned ($ATE = E(Y^1 - Y^0)$ where Y is the outcome of interest (0/1). In addition, an estimate of the ATET is calculated, the average treatment effect for those who actually received the treatment ($ATET = E(Y^1 - Y^0 | D=1)$), where D is the treatment status (0/1)). Both of these measures are important for interpreting the results because the difference between the ATE and ATET accounts for any remaining difference between individuals who have a similar likelihood for having social service contact but who do not experience it.

To our knowledge no previous study in the social work field has used this method for analysis, as it is relatively new to social science. It significantly advances the possibility to identify the effect of receiving one treatment instead of another using observational data. This method offers more flexibility than other estimation methods where conditional independence is not assumed. These alternative methods, for example Poisson regression with endogenous treatment effects, require more structure. More specifically IPWRA offers more flexibility in estimators and functional forms for the outcome models as well as the treatment-assignment models (StataCorp, 2013) which will ease interpretation of results.

Treatment / intervention

For the intervention being evaluated - social service contact - a single binary variable was created from measures at Waves 2 and 3 in LSYPE. The questions ask the main parent “In the last 12 months, have you been in touch with your local council’s social services because of (the young person)’s behavior at home or at school? This includes both you getting in touch with them and them contacting you?” There are some important points to note about the wording of this question. It asks the parent about the local council’s social services which may include, but not be exclusive to, social work intervention. It also adds the clause that the contact with social services is a result of a young person’s behavior. This should mean that social service contact resulting primarily from other problems experienced by family members is not reported in response to this question. Creating a binary variable combining social service contact at Wave 2 and/or Wave 3 (i.e. ever had social services contact? Y/N) allows for a broader understanding of the factors which influence social service contact outcomes and maximizes statistical power.

Dependent Variables

As noted, we use a number of different outcome variables to test the ‘treatment effect’ of social services contact based on the policy intentions of improving the health, wellbeing and life chances of service users. The LSYPE variables which are appropriate to measure these outcomes are: (1) the achievement of five General Certificate of Secondary Education (GCSE) qualifications at grade A*-C including English and Math (‘five good GCSEs’), (2) aspiration to participate in higher education and confidence that if they apply they will be accepted, (3) mental health, and (4) locus of control.

1. Between Wave 3 and Wave 4 the young people sit their GCSE exams. The LSYPE can be linked to the National Pupil Database (NPD) (Department for Education, 2013) which provides information about the actual GCSE grades. GCSEs are two-year courses, examined towards the end of compulsory schooling when the individual is aged 16. The grade scale runs from A*-G, with grade U (unclassified) signifying formal failure. Students, schools, employers, and the Government place particular emphasis on a ‘good pass’ of grade C or above. This measure is particularly useful because it has significance for education progression opportunities including studying for Advanced (A) Level and vocational qualifications, and therefore is linked to status attainment. As well as the binary measure of achieving five good GCSEs, a linear measure for GCSE scores is used as a robustness check. The linear measure is created by taking grade G, the lowest grade achieved, to be 16 points. Each grade improvement thereafter, e.g. From G to F, C to B, or A to A* is equivalent to an additional six 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.

2. Higher education aspirations are important factors (Boudon, 1974; Jackson, Erikson, Goldthorpe, & Yaish, 2007). As Boudon (1974) identifies, while structural factors including socio-cultural influences are associated with actual educational outcome, other factors such as aspiration and confidence of success may also influence educational choices. Jackson, Erikson, Goldthorpe, & Yaish (2007) confirm that evidence consistently shows that children from more advantaged class backgrounds have more ambitious educational aspirations than those from less advantaged backgrounds when academic ability is held constant. Both educational aspiration and confidence of success capture an important dimension of the young person's life chances, and are strongly associated with wellbeing and positive youth development (Lopez, Yoder, Brisson, Lechuga-Pena, & Jenson, 2014). This dimension is captured in the LYSPE by asking the young person whether they will apply to university and by a follow-up question asking whether they believe they will be accepted if they apply.
3. The General Health Questionnaire (GHQ) is a widely used screening instrument in health care practice and research as an indicator of current mental health status and in particular the ability to carry out normal functions. The LSYPE uses the shortened form, GHQ-12, which is found to be reliable and well-validated (Goldberg et al., 1997). In the LSYPE, scores were calculated only for those respondents who had answered all 12 questions; the results of each indicator are summed to run on a scale of 0-12 and young people who have reached the established threshold of four or more items (Goldberg & Williams, 1988) are considered to have current mental health concerns. The items are: 'Have you recently: been able to concentrate on whatever you are doing; lost much sleep over worry; felt that you are playing a useful part in things; felt capable of making decisions about things; felt constantly under strain; felt you couldn't overcome your difficulties; been able to enjoy your normal day to

day activities; been able to face up to your problems; been feeling unhappy and depressed; been losing confidence in yourself; been thinking of yourself as a worthless person; and been feeling reasonably happy, all things considered’.

4. Locus of control (Rotter, 1954) concerns the extent to which people believe that events result from their own actions (internal) or from factors that are external to their control and outside of their influence. This has consequences for motivation, since, for example, those with external locus of control tend to attribute success to luck, blame external factors for failure, and believe they have agency over their destiny. Internal locus of control, therefore, acts as a mediating psychosocial resource. It is associated with higher levels of academic achievement (Crandall, Katkovsky, & Crandall, 1965; Stipek & Weisz, 1981), better mental health, and greater resilience in the face of adversity (Howard, Dryden, & Johnson, 1999). In the LSYPE young people are asked to what extent they agree with the statements: ‘Even if I do well at school, I will have a hard time getting a good job’; ‘People like me don't have much of a chance in life’; and ‘How well you get on in this world is mostly a matter of luck’. The response categories for these questions are on a four-point scale and are coded to a binary outcome (agree or disagree).

Independent Variables

Selection into receiving social service contact is of course not randomly assigned. The empirical strategy addresses these selection problems. The work of Bronfenbrenner (1977; 1979) and Strand (2011) informs the selection of the independent variables to estimate both the treatment model and the outcome model. The treatment model variables are used to calculate the likelihood of receiving social service contact. All are taken from Wave 1 data with the exception

of social class which is taken from Wave 2 as it was not measured at Wave 1. Some of the variables are derived from questions asked of the main parent (MP) and some of the young person (YP). As discussed, in line with Strand (2011), we group these within four main domains: structural, familial, individual, and neighborhood characteristic variables.

Structural factors include social class, parental education, family size, and family structure. The familial factors included are frequency of parents meeting with teachers to address specific problems; parental involvement in school; frequency of arguing with young person; relationship with young person; parents attending parents' evening; monitoring the young person (based on principal component analysis: setting curfews on weekends and weekdays; knowing where the young person is); and socializing (principal component analysis: frequency of spending evenings together, frequency of going out together, and frequency of eating together as a family). The individual factors included are gender; ethnicity; whether the young person is identified as having special education needs; and a linear measure on a scale of zero to eight of participation in risky behaviors including alcohol; cannabis; cigarettes; truant; graffiti; shoplifting; vandalism and violent behavior. Neighborhood factors include the type of neighborhood, geographic location, multiple deprivation index, and income deprivation affecting children index. The results of the logit selection model are reported in the results section.

As the treatment model is a doubly robust estimator, independent variables are also used to control for the outcome variables (educational attainment, aspiration, mental health and locus of control). In each case, the control variables are selected by running logistic regressions with the four broad domains and the statistically significant variables are used (results not shown). For GCSE outcomes, the controls include parental class background; highest level of education of mother/father; gender; and prior educational attainment measured through an average point

score for contextual value added for Key Stage 2 (a standardized test across the curriculum at age 11). For the models which predict aspiration and confidence to apply to university, the controls are parental education; home language; parental aspirations for the young person; and the young person's actual GCSE results. Ethnicity, parental education, and social class background are used to predict mental health outcomes, and ethnicity and parental education are used as controls in the three external locus of control models.

Missing Data

The initial sample for LSYPE was 15,770 children from 658 schools. There was attrition between waves with roughly 27% of the sample having dropped out of the study by Wave 4. In order to account for this, Piesse & Kalton (2009) created a series of weights for longitudinal analysis which have been applied as recommended (unless otherwise stated).

Observations are included in the analytic models when the dependent variable response and the treatment variable have no missing data. However some independent variables also suffer for item non-response. If a full completed case analysis approach were to be adopted, this would result in a loss of over 8,000 cases due to the number of variables included in the models. Rosenbaum & Rubin (1984) recommended including an additional 'missing' category to each covariate which balances the observed pattern of missing values in relation to the observed values using large samples. Therefore in order to avoid dropping cases with missing or unknown information on background variables, dummy variables were constructed to identify when the information was missing. The main advantages of this approach are avoiding the loss of statistical power due to reduced N, capitalizing on the information present, and reducing bias (Rosenbaum & Rubin, 1984). As a robustness test, a completed case analysis was run for all

models and the results do not differ substantially, though statistical significance is slightly weaker.

Results

Descriptive Statistics

Table 1 shows by wave the number of young people who have had social service contact at Waves 1, 2 and/or 3. The table highlights the complexity of the data as well as the variability of missing observations for this variable across waves. Of the 1,498 incidences of contact with social services, 264 have contact at two waves, and 50 have contact at three waves. The absolute risk of social service contact is 8%. For the purpose of this analysis, only social service contact at Wave 2 or Wave 3 is used. Reports of social services contact at Wave 1 were not used, because contact over the 12 months preceding this wave could pre-date many of the risk factors reported at the same wave.

Table 1 about here

Logit Selection Model

The results of the logit selection equation model, which predicts the likelihood of receiving social service contact, are shown in Table 2. The evidence suggests that children from lower social class backgrounds have higher than average odds of having social service contact, so too do young people from a step family and young people who have parents who attend specially arranged meetings to address problems. These meetings are likely to be as a result of the young person's poor behavior. Conversely, having parents who do not attend regular parents

evenings increases the odds of social service contact. The frequency of the young person arguing with the parent is associated with higher odds of having social service contact, and parents reporting not getting on with their child is also associated with an increase in odds of social service contact. Girls are significantly more likely than boys to have social service contact and compared with young people who are white, mixed race people have higher odds, while south Asians have lower odds of having social service contact. Having special education needs is associated with an increase in odds. As for risk-taking behavior such as drinking alcohol, smoking cannabis or cigarettes, playing truant, spraying graffiti, shoplifting, vandalism or violence, our results show that as the number of risky behaviors increase, so too do the odds of social service contact. However those with four risk factors have slightly lower odds than those with three with reference to those with zero.

Table 2 about here

Treatment Models

Turning to the treatment models, we address each hypothesis in the order presented earlier. In each case, our analysis takes account both of the characteristics that predict social service contact and those predict the outcomes in question, in order to isolate the effects of social service contact.

H1 Social service contact increases the odds of achieving the UK Government benchmark qualifications at age 16

Model 1, Table 3 identifies the treatment effects of social work contact on the linear GCSE score outcome. The average treatment effect (ATE) on the population had they all been treated with social service contact is -29.12 points (the potential outcome mean, which means the average GCSE points each young person receives, is 386.28 GCSE points), while the average treatment effect on the treated (ATET) is -45.37 (the potential outcome mean is 297.15 GCSE points). The ATET coefficient is equivalent to a reduction of a whole GCSE at C grade, or one grade lower for each of four GCSEs (e.g. four Bs compared to four As) compared to someone who did not have social service contact. These findings indicate that social service contact is associated with a detrimental effect on GCSE grades.

The GCSE linear metric is quite a variable measure as it includes resits, and some schools allows young people to take more GCSEs than others. So in order to perform a robustness check the effect of social service contact on a binary measure of achieving five GCSEs A*-C is estimated. This level of achievement is both a prerequisite for student progression to further study, and a government benchmark. The results are shown in Model 2, Table 3. The ATE on the population had they all received social service contact yields an odds ratio of 0.94. The ATET is also 0.94, meaning that for young people in the sample who actually received social service contact the odds of achieving good GCSE results are significantly lower than for those who did not.

The findings from Model 1 using a linear measure of GCSE scores indicate that the negative effect of social service contact is stronger for those who receive it (ATET -45.37) compared to the negative effect if social service contact is randomly assigned (ATE -29.12). Model 2 estimates the effect of social service contact on achieving five good GCSEs and this shows that there are negative educational outcomes of having social service contact which are

robust to both the treated and the counterfactual populations. In other words, had all young people received social service contact, they too would have had poorer educational outcomes.

These findings indicate that H1 is rejected.

H2 Social service contact increases the odds of reporting educational aspiration and confidence

The results shown in Model 3 and Model 4 indicate that the odds of young people who receive social service contact applying to university are not significantly different from those without contact, but they are significantly less likely to believe that if they apply they will be accepted (ATE 0.93 and ATET 0.94). Therefore H2 is also rejected: there is no difference between young people who receive social service contact and those who do not with respect to higher education aspiration, and there is a significant reduction in odds for those who receive social service contact for confidence about their application.

H3 Social service contact reduces the odds of reporting mental health issues at age 17

Model 5, Table 2 tests whether having social service contact reduces the odds of the young person reporting that they have mental health problems, when predictors of contact and outcome are taken into account. The results indicate that there is no difference between the mental health outcomes of those who have and those who do not have social service contact. Therefore H3 is rejected: social service contact does not reduce the chance of the young person having poor mental health outcomes, although neither is it associated with an increase.

H4 Social service contact reduces the odds of reporting external locus of control

Models 6-8 test whether social service contact has had an impact on the young person's locus of control. The results here are mixed. Once predictors are controlled for, there is no difference between those who receive social service contact and those who do not for the statement 'even if I do well at school, I will have a hard time getting a good job' (Model 6). However with respect to whether the young person has a perception that they will not have much of a chance in life (Model 7), or whether success is down to luck (Model 8) there is evidence that social service contact significantly increases the odds of agreeing with these statements (yielding ATET of 1.05 and 1.06 respectively). Since young people who receive social service contact have higher odds of expressing external locus of control for two of the three measures, H4 must also be rejected.

Discussion and Applications to Social Services

To our knowledge no previous study has taken a systematic approach to evaluate the effectiveness of social service contact using a nationally representative data set, and a method which isolates the effect of social service contact on a population. Previous work shows that those who received social care were more likely to report negative outcomes in adulthood (Vinnerljung, Sundell, Andree-Loftholm, & Humlesjo, 2006). Our findings advance their work by isolating the effect of social services on a number of outcomes. We find that social service contact, controlling for the complex factors which predict this contact, is associated with poorer GCSE results; a reduction in confidence in being accepted by university if they apply; and an increase in the odds of reporting they have no chance in life, and success in life is a matter of luck. Furthermore, we find no effect of social service contact on mental health, university

aspiration, and belief that the young person will have a hard time in life even if they do well at school is found. There are a number of explanations which may account for these findings.

There may be unobserved characteristics which explain the difference in outcomes for those who have social services and those who do not. The data set does not include variables on the most adverse family circumstances, such as child abuse, neglect and interpersonal violence, which might result in behavior-related social services contact and may also be associated with worse outcomes. One possibility, for example, is that the unobserved conditions which precede social service contact, as well as social service contact itself, may reduce the young person's self-esteem. Therefore it may be that differences in outcome could be attributable to self-esteem, which both precedes and extends through the process of social service contact and is responsible for, rather than a direct effect, of social service contact. The lack of data on the most adverse experiences is an important limitation of the study (of which more below). As for practice implications, social service practitioners should ensure that they take a holistic approach to identifying the needs of service users, to understand what is at the root of their behavioral problems in order to try to address them.

Labeling too may play a part in the construction of self-identity among service users, helping to explain these findings. Educational sociologists have drawn on labeling theory (Becker, 1963) as a way to explain educational inequalities, highlighting that how teachers classify and label students influences the students' self-perception (Benjamin, 2002; Padfield, 1997). Once these self-constructions become fixed they can lead to self-fulfilling prophecies, either success or failure. It may be that labeling both through schools and referring agencies, and through contact with social services, creates a negative self-perception which in turn affects the outcomes of young people with social service contact. Social service practitioners should

explicitly discuss the issue of stigmatization with service users and aim to identify strategies to try to overcome it.

It may be that social service contact creates an increase in reliance which reduces the young person's resilience through the process of learned helplessness (Seligman, 1975; Seligman & Maier, 1967; Hiroto & Seligman, 1975; Watson & Ramey, 1969). This would suggest that the perceived lack of control over their own life prompts the young person to behave in a helpless manner, which in turn renders them unable to identify solutions or opportunities, and compounds the vicious circle. This potential explanation is supported by the fact that the odds of reporting two out of three measures for external locus of control are significantly higher for young people with social service contact. This explanation has important significance for social service practitioners. Social service providers should be constantly aware of service user autonomy during the intervention process and work hard to avoid creating dependence. Conceptualizing social service contact as a more reciprocal process of helping or enabling, rather than 'intervention' or 'treatment' with their connotations of being 'done to' (Bottoms & McWilliams, 1979) may be an important step.

Another possible explanation – and a more optimistic one for social work – is that the beneficial effects of social services intervention may not be experienced in the short-term and that young people's psycho-social functioning may in fact get worse before it gets better. It would follow that a longer-term longitudinal follow-up of people receiving social services would help to establish the processes involved in these interventions.

Limitations

We noted at the outset that, for ethical and logistical reasons, it is very difficult to conceive of an experimental study of routine statutory social work. Hence if we are to explore it systematically, we must use observational data such as the LSYPE. However this type of data presents challenges for a number of reasons, not least because only what is observed can be analyzed. Furthermore, as highlighted by Winship & Morgan (1999), the assignment to both independent and dependent variables is non-random therefore estimating the causal effects is difficult. New methods such as the IPWRA seek to account for this, but the limitations of using observational data remain, in particular there may be unobserved characteristics which explain the selection into the treatment that cannot be included in the model.

Clearly too the measure that can be derived from LSYPE to capture whether the young person has ever had contact with social services as a result of their behavior is an imperfect one. It does not offer a deep understanding of the nature of this contact, such as the frequency of interaction or the nature of intervention. Firstly, it may be subject to reporting biases or misattribution. The concern about misattribution may be somewhat alleviated by the fact that it is the main parent reporting whether the young person had had any contact with social services in the previous 12 months, therefore the recall period is short. Secondly, the LSYPE data are based on the young people' and main parents' self-reports of behavior. When examining issues which are sensitive, such as reports of stigmatizing risky behavior (e.g. taking drugs) or social service contact, there is no way to validate recall accuracy or truthfulness. The work of methodologists such as Murray and Perry (1987) show that reporting veracity can be improved with assurances of confidentiality and anonymity, both of which were given to LSYPE participants. This paper explores the reported cases only, but we acknowledge that many cases may go underreported for these reasons.

To be sure, the LSYPE data do not contain information on the nature of social service contact, whether it was voluntary or involuntary, its quality, extent or frequency. As noted earlier, many children receive limited further action or perhaps no further action beyond the initial contact. We do not know the pattern of experience within the LYPSE sample; however it is possible that our findings tell us not just about the effects of social service contact, but also those of receiving little intervention after first contact.

Conclusion

The examination of the causal effect of routine statutory social service contact using observational data yielded some interesting results. The findings indicate that there is no significant difference between those who receive social service contact and those who do not for mental health outcomes, aspiration to apply to university and belief that they will have a hard time in life even if they do well in school. There is evidence that those who receive social service contact have significantly lower odds of achieving GCSEs and significantly higher odds of reporting external locus of control.

One possible explanation for the results is adverse experiences which are associated with social services contact but are unobserved in this study. There are also theoretical perspectives which might help shed light on the findings, namely labeling theory and learned helplessness. Another possibility is that beneficial effects of social services may only appear over a longer period of time than covered in this study. A further explanation is that the service received was minimal only, and insufficient to meet the need. All these possible explanations are speculative and no firm recommendations can be made on the basis of speculation.

If social services contact either makes no difference to young people or makes things worse, urgent attention is needed to the content and style of intervention. This paper is original in its focus on routine statutory social services contact, within a youth cohort study, as opposed to a specific intervention program. This focus is a strength, since experimental studies of social work outcomes usually concern more specified interventions which may not get used in the real world of routine practice. But it is also a weakness, insofar as the data do not tell us what the ‘contact’ consisted of and what kinds of help, if any, were put in place. It may be that insufficient intervention is offered, or ineffective approaches are routinely being used, or that social services staff lack effective communication skills for engaging young people in the effective interventions that are available. There is evidence, for example, that deviancy training and peer-group interventions can have iatrogenic effects (Dishion, McCord, & Poulin, 1999). In contrast, certain interventions show some evidence of effectiveness in reducing teenage problem behavior, such as multi-systemic therapy and functional family therapy (Schaeffer & Borduin, 2005; Sexton & Turner, 2010). However, these interventions are not routinely offered by social services in England. The findings emphasize the importance of evidence-informed practice and the use of outcome evaluation in routine practice. In particular, attention is needed to the role of social workers in supporting young people’s formal education, since in this study social services contact, to whatever extent it happened, was associated with worse educational outcomes, after controlling for personal, family, neighborhood, and structural factors. However, it may also be that non-intervention is more helpful for young people who will grow out of problem behavior. This has long been known in the field of youth offending (see Schur, 1973) but possibly English social services should pay more heed of this tradition.

Future research should examine the effects of social service contact in the longer term, identifying the nature and extent of intervention. Furthermore it should make use of more advanced statistical methods which isolate the effects of social service contact and identify nationally representative datasets in order to systematically compare populations who receive social service contact with those who do not, and the effects of this intervention. More specific interventions can also be empirically tested using these methods, although this may call for new data collection. Future research planned by the authors will involve exploring what factors may ameliorate the outcomes of routine social services or social work contact, as well as understanding more about the nature and extent of the intervention.

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Table 1. Incidences Social Service Contact in Last 12 Months by Wave

Incidences of Social Service Contact by Wave	Yes	No	Total	%
Wave 1	615	13,440	14,055	4%
Wave 2	496	11,620	12,116	4%
Wave 3	387	10,896	11,283	3%
No. of young people with Social Service Contact				
Total	1,184*	14,016	15,203	8%

Data: LSYPE.

*Of the 1,498 incidences of social service contact across three waves, 264 have contact at two waves and 50 have contact at three waves therefore 1,184 have 'ever' had social service contact over three waves.

Table 2. Logistic Regression: Selection into Social Service Contact Equation (Treatment Model)

Variables: Reference Category	Dummy Variables	OR	SE
Class: Higher Service	Lower Service	2.09**	(0.52)
	Routine non manual	3.16***	(0.88)
	Small proprietors	2.01*	(0.61)
	Technical and Supervisors	2.39***	(0.63)
	Semi Routine	3.38***	(0.87)
	Routine	2.46***	(0.66)
	Unemployed	3.33***	(0.86)
Step family status: Not a step family	Step family	1.32*	(0.17)
Teacher's meeting: Do not attend specially arranged meetings	Parents attended specially arranged meetings	1.93***	(0.18)
Frequency of arguing with YP: Hardly ever	Most days	2.13***	(0.32)
	More than once a week	1.96***	(0.27)
	Less than once a week	1.62***	(0.23)
	Never	1.19	(0.34)
How well MP gets on with YP: Well	Badly	3.76***	(0.92)
Parents evening: Attended	Parents did not attend parents' evening	1.66***	(0.21)
Gender: Male	Female	1.39***	(0.13)
Ethnicity: White	Mixed	1.26*	(0.12)
	South Asian	0.63*	(0.12)
	Black	0.92	(0.18)
	Other	0.75	(0.25)
Special education needs: None	Special education needs	1.88***	(0.22)
Number of risk factors: None	One risk factor	1.58***	(0.20)
	Two risk factors	2.06***	(0.31)
	Three risk factors	2.99***	(0.48)
	Four risk factors	2.72***	(0.52)
	Five risk factors	3.52***	(0.83)
	Six risk factors	4.08***	(1.16)
	Seven risk factors	6.24***	(2.03)
	Eight risk factors	7.79***	(4.11)

Data: LSYPE.

Standard Errors in Parenthesis.

Control Variables (yielding non-significant results): parental education, family size, family structure, parental involvement in school (self-reported), monitoring the young person (based on principal component analysis of setting curfews on weekends and weekdays; knowing where the young person is), socializing with the young person (principal component analysis: frequency of spending evenings together, frequency of going out together, and frequency of eating together as a family), gender; ethnicity, type of neighborhood, geographic location, multiple deprivation index, and income deprivation affecting children index.

*** p<.001, ** p<.01, * p<.05, + p<.10

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

Model 1: Linear GCSE score			Model 2: Five GCSEs A*-C (inc English & Math)		
	β	<i>SE</i>		<i>OR</i>	<i>SE</i>
Social Service Contact ATE	-29.12**	(9.30)	Social Service Contact ATE	0.94***	(0.02)
Social Service Contact ATET	-45.37***	(5.60)	Social Service Contact ATET	0.94***	(0.01)
Observations	11,586		Observations	11,586	
Model 3: Likely to apply to University			Model 4: Likely to be accepted if apply to University		
	<i>OR</i>	<i>SE</i>		<i>OR</i>	<i>SE</i>
Social Service Contact ATE	0.99	(0.02)	Social Service Contact ATE	0.93*	(0.02)
Social Service Contact ATET	0.98	(0.02)	Social Service Contact ATET	0.94*	(0.02)
Observations	11,465		Observations	8,900	
Model 5: Mental Health			Model 6: I will have a hard time getting a good job		
	<i>OR</i>	<i>SE</i>		<i>OR</i>	<i>SE</i>
Social Service Contact ATE	1.02	(0.03)	Social Service Contact ATE	1.03	(0.03)
Social Service Contact ATET	1.03	(0.02)	Social Service Contact ATET	1.01	(0.02)
Observations	10,651		Observations	11,376	
Model 7: No chance in Life			Model 8: Success is a Matter of Luck		
	<i>OR</i>	<i>SE</i>		<i>OR</i>	<i>SE</i>
Social Service Contact ATE	1.03	(0.02)	Social Service Contact ATE	1.06*	(0.03)
Social Service Contact ATET	1.05*	(0.02)	Social Service Contact ATET	1.06**	(0.02)
Observations	12,126		Observations	11,859	

Data: LSYPE.

Standard Errors in Parenthesis.

Reference Category: No contact with other similar services.

Controls variables for the outcome model: Model 1 & 2: parental class background, highest level of education of mother/father, gender, and prior educational attainment measured through an average point score for contextual value added for Key Stage 2. Model 3 & 4: parental education, home language, parental aspirations for the young person, and the young person's actual GCSE results. Model 5: ethnicity, parental education, and social class background. Model 6 - 8: ethnicity and parental education.

*** p<.001, ** p<.01, * p<.05, + p<.10