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Growing up lonely?

Exploring the social outcomes of
three generations identified with
special education needs or
disabilities in childhood

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Abstract

Social isolation and loneliness currently have high prominence on the political agenda in the UK. While social isolation can affect anyone and at all stages across the life-course, some are more vulnerable than others. One risk factor for poorer social outcomes is disability, which is itself often compounded with social disadvantage. We draw on data from three British longitudinal studies to examine social outcomes of those identified with special educational needs or disabilities when they were teenagers. We compare three different generations, born between 1958 and 2000/02, across a range of measures of social engagement and social support experienced in their 50s, 20s and teens, respectively. This gives us insight both into the long-term consequences of childhood disability for social engagement and social support, but also enables us to evaluate for the younger cohorts the early indications of such future lifecourse patterns. We find substantial differences in social support and social engagement among 50-year olds. Moreover, despite successive governments agreeing that those with disabilities deserve a better deal out of life, today's disabled youth and teenagers also experience greater social isolation than their non-disabled contemporaries. We discuss the implications of our findings.

Key words: SEN, disability, social isolation, loneliness, life-course

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Introduction

In response to the report '*Combating loneliness one conversation at a time: A call to action*' (Jo Cox Commission on Loneliness, 2017) the UK government developed a strategy to alleviate loneliness (Department for Digital, Culture, Media and Sport, 2018). Loneliness and social isolation can affect anyone at all stages across the lifecourse, but some people are more vulnerable to it than others. Age has been found to have a 'u-shaped' relationship with loneliness (Victor & Yang, 2012) with younger (15-25) and older (age 55 plus) being most at risk; and there is a strong link between social isolation and social inequality (Durcan & Bell, 2015). However, among older people, other characteristics account for differences in loneliness (ONS 2018a). Key individual risk factors include being in poor physical or mental health, being single and living alone, living in rented housing, having reduced access to technology and being disabled (Nicolaisen & Thorsen, 2014; Griffiths, 2017; ONS, 2018b), with many of these risk factors occurring concurrently.

This raises the question of how different risk factors are mutually implicated or cumulative across the life course. In this paper we expand understanding of how far disability is independently associated with poorer social outcomes. By identifying disability in childhood, we can explore the long-term impact of disability on adults' social outcomes in later middle age, when they are likely to be more vulnerable to loneliness. We explore these associations controlling for the confounding factors of family background and educational attainment. In addition, by comparing these older adults with younger generations of disabled people, we ascertain how far poorer social outcomes are a function of age or birth cohort and how far they are consistently associated with disability across generations and at younger ages.

We draw on three UK longitudinal studies, with rich measures of social outcomes as well as information on family background and childhood disability status. For all three studies, we measure disability in the teenage years, employing disability measures that were evaluated in the specific school (and therefore social) context relevant to each cohort. For the younger two cohorts we also employ a more severe measure that is arguably more directly comparable to the older cohort. We map subsequent social outcomes across key domains of family and relationships, friendships, activities, all linked to loneliness, for those aged 50. We then compare outcomes of those who were in their twenties or their mid-teens around the same time. This provides insight into the social outcomes of those with childhood disability at different stages of the life-course. This is important given that measures of social outcomes by contemporary disability at different ages are inherently non-comparable given that who constitutes the disabled population also changes with age and disability onset; and disability in later life itself may be a consequence of social isolation. By contrast, we are able to identify the long and short-term social implications of being marked out as disabled in youth.

This is, to our knowledge, the first attempt to consider differences in social outcomes by disability status using a measure of childhood disability. Our additional contributions are threefold. First, we show how disability is associated with social isolation at three distinct and salient points in the life course: later mid-life when adults are more at risk of loneliness, the early twenties when adults are forming and consolidating their enduring social relationships and establishing themselves in work,

and the teenage years, which is another time when individuals are particularly vulnerable to isolation in ways which may have consequences for their subsequent social interactions. Second, we are able to take account of prior factors that are associated with both disability and social support, in particular family background and educational attainment, thereby enabling us to more precisely estimate the independent impact of disability. Third, we look at a range of age-relevant social outcomes, in key domains linked to social support and loneliness. However, we make no assumptions about the specific associations between them. By these means we enhance understanding of disability, loneliness and social support among both older and younger individuals.

We find evidence that teenage disability casts a long shadow on the social outcomes of those in later mid-life, and that the social consequences appear to accumulate over time (Durcan & Bell, 2015). But we also observe that such social impacts of childhood disability are already evident among those their mid-20s, even if they are not as severe as for older adults. Moreover, despite years of successive governments agreeing that those with disabilities and additional needs are a constituency deserving of a better, fairer deal out of life, today's disabled teenagers still experience greater social isolation than their non-disabled peers. We conclude that disability is linked across the life course to poorer social outcomes. Despite the relatively greater attention paid to disabled people's economic outcomes (e.g. Powell, 2018; Gardiner & Gaffney, 2016; Burchardt, 2005; Jones, Davies & Drinkwater, 2018; Longhi et al, 2012; Demos, 2006), the social consequences of disability cannot be solely attributed to differences in socioeconomic position or the later onset of disability (Lund et al. 2010). Instead they start early and persist. For those disabled in childhood the cumulative effects by later mid-life appear to be particularly stark. The factors implicated in the social exclusion of disabled people and the potential for positive interventions at different life stages merit more sustained attention.

In the next section we develop the background and context to our study. We then outline the data and approach, before presenting the results. In the final section, we provide some discussion and implications.

Background

Loneliness and social support

Social isolation and loneliness currently have high prominence on the political agenda in the UK. Social contact and companionship are basic human needs and are recognised as being important for individual wellbeing (ONS, 2019). Nevertheless, many of us will experience loneliness at some time. However, loneliness in others can be easy to overlook, as people may be reluctant to admit it as society generally supports and rewards self-reliance (Griffiths, 2017). Loneliness can affect anyone at all stages across the life-course, but some people are more vulnerable to it than others. The duration of limited social interaction can determine how much of a negative experience it is: experienced over a long enough time isolation can create 'a persistent, self-reinforcing loop of negative thoughts, sensations and behaviours' (Cacioppo & Patrick, 2008). For example, among older people who reported they felt left out, isolated or lacked companionship, the ability to

perform daily activities like bathing, grooming and preparing meals declined and deaths [increased over a six-year study period](#) relative to people who reported none of these feelings (Perissinotto, Stijacic Cenzer, & Covinsky, 2012).

The link between loneliness, health and wellbeing supports the wider literature on social support and the value of relationships (e.g. ONS, 2012; Beaumont, 2013; Berkman 2000; Berkman et al. 2000). Solitary confinement has been viewed as an especially cruel punishment (Anderson, 1994; Kaba et al, 2014; Shalav & Edgar, 2015); and in a meta-analysis of existing research on the importance of social relationships Holt-Lunstad, Smith & Layton (2010) stated that 'weak social connections carry a health risk that is more harmful than not exercising, twice as harmful as obesity, and is comparable to smoking 15 cigarettes a day or being an alcoholic.' Loneliness and social isolation have also been found to increase the likelihood of mortality by 26 per cent (Holt-Lunstad et al, 2015), to increase the risk of Alzheimer disease (Wilson et al, 2007), coronary heart disease and stroke (Valtorta et al, 2016) and in the case of an emergency or long-term illness, social contact and friendships are associated with increased survival rates, primarily as there is someone to offer support and to be around to help you get better (Kroenke et al, 2006; Marmot, 2010).

Loneliness and disability

As with many aspects of disadvantage, the relationship between loneliness and disability is bi-directional. Lonely people have poorer health and increased rates of becoming disabled, while disabled people have greater experience of loneliness and social isolation (ONS, 2018a; Lund et al. 2010). Disability is inherently socially experienced: it is in encounters with society that disability manifests and is experienced as disabling. Unlike sexism or racism, the word 'disablism' is not found in the Oxford dictionary; yet studies have consistently shown that disablism is pervasive in British society (e.g. Demos, 2004; IPPR, 2007; Equality and Human Rights Commission, 2017). One in three disabled adults feel there is a lot of disability prejudice in the population (Dixon, Smith & Touchet, 2018); and two-thirds of respondents to a survey stated they would feel uncomfortable talking to a disabled person, with younger respondents – those aged between 18 and 34 – reporting they actually avoided talking with disabled people (Aiden & McCarthy, 2014). The consequences of such negative attitudes are compounded by the economic pressures faced by disabled people. The Life Opportunities Survey, a longitudinal survey of disability in Great Britain found that many disabled people struggled to participate in a range of normal daily activities, partly as a result of lack of resources (ONS, 2015). As a result two-thirds of disabled adults reported that felt lonely in the past year, rising to 85% among younger disabled adults aged 18-34 (Scope, 2017).

This raises the question of how far such isolation is implicated in disabling processes starting in youth or whether they emerge concurrently with disability and economic insecurity in later life. Social isolation in childhood is associated with continued isolation in adolescence and adulthood (Durcan & Bell, 2015). The effects of social isolation and loneliness are therefore likely to accumulate over time. Among children and adolescents, social isolation and loneliness is generally associated with being bullied due to non-conformance in some way, with the prevalence of bullying being significantly higher among young children and adolescents with special educational needs

(SEN) and disability (Chatzitheochari, Parsons & Platt, 2016). Children with SEN are less popular and have fewer friends at school than their non-SEN peers (Avramadis, 2013), and this lack of social integration removes the protective barrier against bullying that friendships can give (Hodges et al, 1999; Crawford & Manassis, 2011). Those with SEN have a more negative social self-concept than their non-SEN peers (Pijl & Frostad, 2010) and feel that they occupy a lower social position (Ruijs & Peetsma, 2009).

Childhood disability and associated experiences may therefore influence pathways into and through adulthood, as those with disabilities have more difficulty accumulating the fundamental building blocks associated with transition to adulthood – e.g. friendships, educational attainment, employment opportunities, partnership and family formation (Janus 2009; Chatzitheochari & Platt 2018; Jones 2008).. Children with disabilities spend more time within the family home (Beresford & Rhodes, 2008), but as they move through adolescence into adulthood accessing the sources of support and companionship outside of the family that become increasingly important for fulfilling individuals' roles as independent citizens, is more difficult (IPPR, 2007; Parnell & Bush, 2009).

As such, family life – a key source of support, guidance and social engagement – may be both particularly important and more likely to be absent for those with disabilities across all stages of the lifecourse. More adults with a disability are living a single life, whether this is from a relationship breakdown following later onset of disability or from never having had a relationship or a long-term partner (Pitzele, 1995; Clarke & McKay, 2008). Adults with a disability have as much need as non-disabled adults for intimacy (Anderson & Kitchin, 2000) and to have a partner to share the challenges and rewards that life offers. However, a study of disabled people's sexuality by Leonard Cheshire Disability (2008) found that nearly half of single disabled respondents were not optimistic about finding a partner (Laxton & Goldsworthy, 2008).

Social contact in the wider community and from leisure activities can therefore hold increased importance for those with a disability, yet an array of obstacles stand in the way: equal access to recreational facilities, acceptance by others, feeling safe, physical and financial barriers (Pyer & Bush, 2009). Technology is one way that can increasingly help reduce social isolation, and getting more disadvantaged groups 'online' has been part of UK government thinking since the 'Digital Britain' report (BIS, 2009). However, in 2017 one in 10 households still had no Internet access, with Internet use being least likely among older adults, particularly those who are disabled. There was no difference in Internet use by disability status among younger adults (ONS, 2018b); however, although Internet access and social media offer a means of social contact, they can also have negative impacts. Adults and children with disabilities can be particularly vulnerable to online abuse, which has led to a cross-party parliamentary inquiry into how social media companies and the government have failed to protect the disabled community (Parliament Select Committee, 2018).

Despite this evidence of social exclusion and disadvantage, we still have limited understanding of how early life disability impacts adults at later stages in the life course, and how far it is separable from the cumulative impacts of economic disadvantage, with which it is associated. We also have little insight into whether impacts differ at different life course stages. In this paper we therefore

adopt a life-course perspective (Priestley, 2001; Powell, 2003) to extend our understanding of the relationship between SEN, disability and aspects of loneliness and social isolation for three generations of Britons born over four decades apart.

Both the construction of disability and its association with disadvantage are highly contextually contingent (Unicef 2013; Altman 2014). We therefore use measures of special educational needs and disability that were applicable when the members of the longitudinal studies under consideration were teenagers, and exploit the available information in the National Child Development Study (1958 Cohort), Next Steps (born in 1989-90) and Millennium Cohort Study (2000/2) to explore a range of social outcomes for people at different life stages living in the UK today. Given the different definitions and measures that were available across the studies (discussed further below) we summarise these contextually specific measures of disability using the categories 'no disability' 'disability' and 'severe disability'. This enables us both to acknowledge how disability is constructed differently in the classroom in different periods, but also to employ a relatively invariant measure of 'severe disability' for comparison across the cohorts. We address the following questions,

- a) How different is life at age 50 for those identified with a disability in adolescence compared to their non-disabled peers who were not identified with childhood disability?
- b) How do personal life experiences at age 25 compare for young adults identified as disabled or not in their teenage years?
- c) How do today's teenagers feel about their friends and friendships at age 14, and how does this vary by disability?

Data and samples

We use information from three longitudinal British cohorts.

The 1958 Cohort (National Child Development Study)

The 1958 cohort (University College London 2012a), also called the National Child Development Study (NCDS), is a continuing, multi-disciplinary longitudinal study, which takes as its subjects all the people born in England, Scotland and Wales in one week in March 1958 (Power & Elliott, 2006). Information was gathered on 17,415 babies, and there have been nine subsequent attempts to trace all members of the birth cohort in order to monitor their physical, educational, social and economic development. These were carried out when cohort members were age 7, 11, 16, 23, 33, 42, 46, 50 and most recently in 2012 when age 55. In this study, we use data up to age 50. Our analytical sample comprises all who were included in the original birth survey, provided additional needs or disability information at age 16 and were still alive at age 50 (n=12,762).

Given the greater likelihood of those with a disability attriting, we address the problem of missing data (Allison 2001). Since complete case analysis tends to return biased estimates, we use multiple imputation with chained equations to 'fill-in' values of any missing items in the variables

selected for our analysis, adopting Schafer's data augmentation approach (Schafer, 1997) under the assumption of 'missing at random' (MAR). In order to maximise the plausibility of the MAR assumption we included auxiliary variables in our imputation model. In this instance MAR implies that our estimates are valid if missingness is due to variables (auxiliary or substantive) that were included in our models (Little & Rubin, 2002). All reported analyses are averaged across 20 replicates based upon Rubin's Rule for the efficiency of estimation under a reported degree of missingness across the whole data of around 0.20 (Little & Rubin, 2014).

Next Steps

Next Steps, previously known as the Longitudinal Study of Young People in England (LSYPE), follows the lives of 15,770 people born in 1989-90 (University College London 2018). The study began in 2004 when the young people were in Year 9 (age 13-14) of state and independent schools in England. The study has collected information about their education, employment, economic circumstances, family life, physical and emotional health, wellbeing, social participation and attitudes. Cohort members were surveyed every subsequent year until 2010, when they were age 19-20, then re-contacted in 2015/16, when aged around 25 and 7,707 took part. Of these we have information on disability status from the first two surveys for 7,499, and these comprise our analytical sample.

Millenium Cohort Study

The longitudinal Millennium Cohort Study (MCS) is a study of approximately 19,000 babies born to families living in the UK between September 2000 and January 2002, who are followed over time (University of London 2017a, b, 2019; Plewis 2007). Data have been collected when the children were aged around 9 months, 3, 5, 7, 11 and 14 (Calderwood et al., 2015). The most recent interview took place during 2017-2018 when the cohort was around 17. The multi-topic study collects information on family context, physical and cognitive development, attitudes and experiences. Information from self-completion and parent questionnaires was collected for 11,726 cohort members when age 14. We have information on disability status for n=11,534, who form our analytical sample.

For both MCS and Next Steps, all analyses are weighted to adjust for the complex sampling design of the surveys and for nonresponse. We investigated patterns of attrition and found no evidence for an increased risk of dropping among respondents with a disability, which could potentially have biased our estimates.

Variables

Dependent variables

Given the very different ages of the members of the three cohort studies, we have a wide range of measures that encapsulate aspects of loneliness and social isolation. These have been organised into the key domains identified as salient in the background section and are summarised under

corresponding sub-headings below. We provide full details of how each of the other variables was recoded into binary outcome measures in Appendix 1. Demographic measures are derived from information on household composition.

Family and relationships

For adults in their 50s (NCDS) we explore differences by disability status in marital status and cohabitation, parenthood, whether their parents are still alive, and if they still live with a parent (overwhelmingly their mother). Comparably, for those in their mid-20s (Next Steps) we examine cohabitation patterns, experience of being in an intimate relationship, whether they have children, have ever had sex, and if they have ever left the parental home.

Friends, trusting, feeling able to rely on others

We have measures of friendships and trust in other people for all three studies. For the 1958 cohort we include measures of how often they have visited, been visited by, had telephone or written contact with a friend, and whether they had access to a computer to gauge potential online contact with family and friends. For young adults in Next Steps we include how often they meet up with friends; and for teenagers in MCS whether they had a close friend and how much time they spend with close friends in a month.

In terms of being able to rely on others, adults in NCDS reported whether they felt they had someone to count on if they were sick in bed, to listen to their problems or feelings and whether they felt most people could be trusted. In Next Steps we similarly have how much the young adults felt people were willing to listen to their problems. For MCS teenagers we have how much they trust other people, whether there was someone they felt close to, if they had family or friends to help them feel safe and happy or to turn to if they had a problem.

Activities and going out

Adults in NCDS reported how often they did a range of activities from financially free activities such as tending the garden or going for a walk, to going to the cinema, theatre, watching live sport or going out for a drink or meal. Similarly, young adults in Next Steps reported how often they played sport or did exercise, went to the cinema, theatre, pub/bar or had a meal in a restaurant.

Bullying and hate crime

For both Next Steps and MCS we have a measure of self-harm; and for adults in Next Steps we have two measures of their experience of name calling or other verbal abuse and being bullied,

gossiped about or ignored.¹ Teenagers in MCS reported their experience of being picked on, insulted or shouted at, physical violence (e.g. shoved, hit slapped) or being hit with or had a weapon used against them.

Independent variables

Disability

Definitions of disability have varied over time. What constitutes special educational needs or disability is historically and contextually contingent, depending on how environments are or are not disabling for particular forms of impairment (Altman 2014; Unicef 2013; Barnes & Mercer 2005), and on changing expectations of school pupils and school performance (Powell, 2003; Tomlinson, 2017). Cognitive, socio-emotional and physical disabilities have each been understood differently at different times and contexts in terms of their implications for learning and future opportunities and outcomes (Powell, 2006).

While in earlier decades fewer children were expected to leave school with qualifications or to stay on to post-compulsory education, special needs or disabilities were only identified for a relatively small proportion. Subsequently the proportions expanded (Tomlinson, 2017). The most recent figures for England suggest that 14.4% of school age children have special educational needs, although those ever identified with special education needs or disabilities is higher at around 40 per cent (Hutchinson, 2017). These trends reflect changing patterns of educational performance and expectations that have social implications (Chatzitheochari et al. 2016), and we therefore focus on the measures of special educational needs or disability as they were applied at the different periods the children in the three cohorts were in school. While this is clearly a heterogeneous group, it is one that is constructed in a social context and therefore is particularly relevant as a category for our consideration of social outcomes and our measure of severe disability captures a relatively similar proportion of children across the three cohorts, enabling a more consistent comparison.

For the 1958 cohort, we derived our measure of disability by recreating the measures used in the subsample analysed for the 1976 *Warnock Study of Handicapped School Leavers* (University of London 2012b; Parsons 2012), and collapsing the seven category variable into a binary measure of disabled or not (Walker, 1982). For the 15,466 who participated in the age 16 survey 4.5% of men and 2.6% of women were identified as disabled and in our final analytical sample 4.2% of men (n=271) and 2.6% of women (n=161) were disabled. The small difference is partly accounted for by the fact that teenagers identified with a disability had a higher mortality rate than teenagers with no disability.

In Next Steps and MCS we use all those identified with Special Educational Needs to identify *disability*, to compare with the derivation of the 1958 measure. However, we also repeat the

¹ Measures in Next Steps and MCS to do with to do with abuse or harassment via a mobile phone or online and whether they had been a victim of theft or unwelcome sexual attention or abuse were recorded in very small numbers and are therefore not susceptible to analysis.

analysis for those who had a 'Statement' of educational needs, subsequently replaced with Education Health and Care Plans (Dfe and DoH 2015), which we characterise as *severe disability*. Statements reflect greater severity of learning needs and this group is more comparable in size to those identified in the 1958 cohort. In Next Steps, parents were asked whether the young person currently has any special educational needs or disabilities at wave 1 (at age 13/14) or wave 2 for those who were missed at wave 1, and we combine responses from these first two surveys (2004-6). We excluded the small numbers for whom their educational need was related to speaking English as another language or to being 'gifted and talented' (cf. Chatzitheochari & Platt 2018). In the first two waves, 13 per cent were identified as being disabled of whom 5 per cent had a Statement of Need (severe disability). In our analytical sample, 13.9% had been disabled when at school (18.1% men, 9.7% women) of whom 5.2% were severely disabled (7.7% males, 2.8% females), very close to the original proportions.

In the MCS, we use the information asked about special educational needs when the cohort member was age 14, for comparability with the other studies. As for Next Steps, we excluded the small numbers for whom their educational need was related to speaking English as another language or being 'gifted and talented' (cf. Parsons & Platt, 2017), and we again distinguish between all disabled and severe disability as measured by a Statement of Need or an Educational Health and Care plan. At age 14, 10.9% were disabled, with boys being twice as likely to be identified with educational needs or disabilities as girls (14.5% to 7%), and 5.6% were severely disabled (7.8% boys, 3.1% girls).

Other measures

Child sex

We distinguish between boys (0) and girls (1).

Family background

In the 1958 cohort, family social class was derived from father's occupation measured at the time of birth. In the few cases where there was no father, the occupation of the mother's father was used. Occupations were coded to the *Registrar-General's Social Classes*, a six-category classification ranging from 'unskilled' to 'professional' occupations introduced in 1913. This has subsequently been replaced with the National Statistics Socio-economic Classification (NS-SeC; Rose & Pevalin, 2003; Rose, Pevalin & O'Reilly, 2005). The parental occupations in Next Steps and MCS from the first wave were categorised to a reduced eight-category version of the NS-SeC ranging from never worked/ long-term unemployed, through routine and semi-routine occupations to higher managerial and professional. The highest category of mother or father is used.

Highest qualification

For NCDS and Next Steps, the highest academic qualification an individual achieved was grouped to National Vocational Qualification (NVQ) levels in both cohorts, providing a range from no

qualifications to NVQ4 or higher. NVQ4 is equivalent to a degree.

Cognitive ability

As the younger MCS cohort had not yet attained formal qualifications at age 14, we used a standardised score from the BAS II Verbal Similarities assessment (Elliott, 1996; Elliott et al, 1997), a measure of 'crystallised intelligence' that the children completed at age 11. For further details of the assessments completed by MCS cohort members see Connelly (2013).

Analytic Strategy

For each age cohort, we first describe significant differences in friendship, family and social experiences of those identified with and without disability or severe disability as teenagers. We do this separately for men and women, given their different social life and friendship patterns, together with differences in the age of entry into cohabitation, marriage and parenthood.

We then estimate a series of logistic regression models for each measure and its association with disability, adjusting for sex, social background and educational attainment / cognitive ability, since research has shown that disabled youth are more likely to be male, to come from lower social class backgrounds (Powell, 2006; Parsons & Platt, 2013; Tomlinson, 2017), to fall behind academically in childhood (Parsons & Platt, 2017), and to leave school at the end of compulsory schooling with few or minimum qualifications (Wilson, 2003; Burchardt, 2005; Loprest & Maag, 2007; Chatzitheochari & Platt, 2018). These regression analyses also enables us to distinguish the long-term or cumulative effects of disability from those of social background and educational attainment. Given some observed differences in the raw associations for disabled men and women, we additionally estimated linear probability models to identify any significant interactions between sex and disability for each outcome. We report adjusted predicted probabilities for all statistically significant main effects for each outcome by disability status; and we discuss any significant interactions between sex and disability in the text.

Results

1958 cohort: disability, family, friends and social life at 50

We first turn to the NCDS cohort – who turned 50 in 2008 – and look at how life has turned out for those identified with a disability in adolescence more than three decades earlier in 1974. Table 1 shows that compared to those with no identified disability in adolescence, far more men and women with a disability were single – having never married or cohabited – and had also not become a parent. A higher proportion of men and women with a disability remained living with their mother – most notably so for men – but more had also experienced the loss of one or both parents.

In terms of contact and support from their friends, far fewer adults with a disability in adolescence felt most people could be trusted and more had not visited or been visited by any friend in the last

two weeks, or had any contact by phone or letter. More also felt that they did not have someone they could turn to if they were sick in bed or to listen to their problems. Perhaps adding to this sense of loneliness was that far fewer either had access to or used a computer at home, thus making keeping in contact by email also not an option. Across many of these measures, differences compared to those not identified with a disability in adolescence were starker for women than for men. The social life of 50-year-old men and women identified with disability in adolescence was also relatively impoverished. Far fewer ever went to the cinema, theatre or sporting event, but perhaps more importantly, far fewer ever went out for a drink or even for a walk.

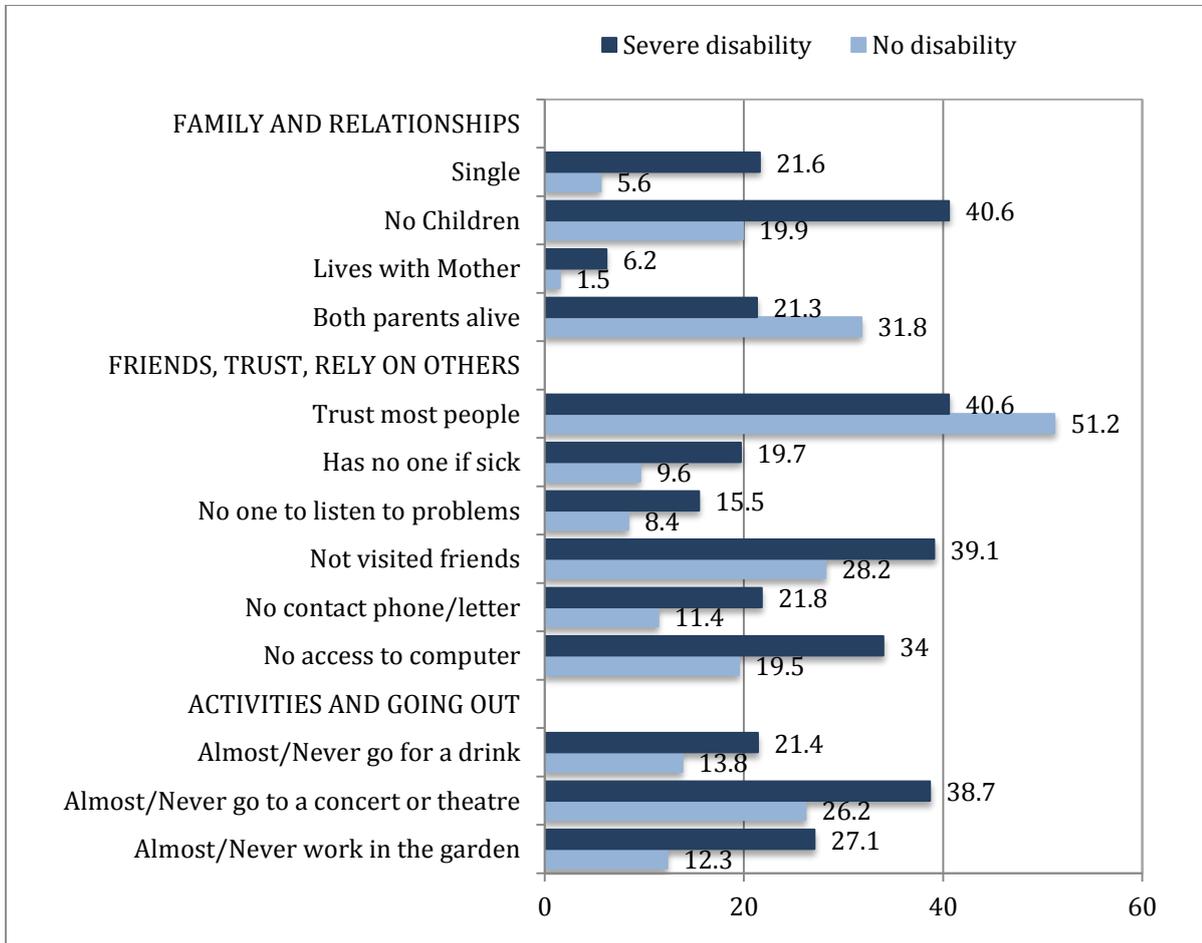
These differences largely persisted after adjusting for family background, gender and highest level of qualification in the multivariate models, and with relatively little attenuation (Figure 1). This speaks to the strength of childhood disability in shaping outcomes, as well as the ways in which it might form a channel for family background. Exceptions were marital status, which appeared to be accounted for by social origins and education; and some of the activities, which might suggest financial constraints linked to the consequences of family background and low educational qualifications. Inspection of the models with gender and disability interacted showed that the greater likelihood of living with a parent at age 50 was particularly the case for men. On other measures the effects for disabled men and women did not differ significantly.

Table 1: Family and friends at 50 by childhood disability status

	Men		Women	
	No disability	Severe disability	No disability	Severe disability
Family and relationships				
Single (never married /not cohabiting)	6.1	23.8*	5.2	21.4*
Previously married/cohabited	22.1	36.2*	24.3	40.5*
Currently Married / Cohabiting	71.8	40.0*	70.5	38.1*
Never had children	20.5	40.3*	19.3	39.1*
Living with mother	1.6	9.0*	1.4	4.8
Both parents alive	32.8	21.3*	30.9	16.8*
Both parents dead	27.9	39.5*	30.1	48.2*
Friends, trusting, feeling able to rely on others				
Can count on people to help if sick in bed: 'not at all' or 'only a little'	8.5	19.2*	10.3	23.4*
Has people around to listen to problems and feelings: 'not at all' or 'only a little'	8.8	21.0*	8.1	19.2^
Most people can be trusted	50.4	29.0*	52.7	36.3*
CM not visited friends in last two weeks	29.2	42.1*	26.9	50.8*
Friends not visited CM in last two weeks	38.6	44.2*	38.1	48.7^
No contact with friends by letter or phone in last two weeks	13.5	26.6*	9.1	32.7*
No access or use of computer at home	17.8	49.1*	20.3	56.7*
Activities and going out				
Never or almost never play sport, go for a walk/swim	7.3	18.1*	8.1	17.1^
Never or almost never go to the cinema	29.9	49.7*	24.5	45.9*
Never or almost never go to the theatre	29.3	56.6*	22.1	52.6*
Never or almost never watch live sport	38.9	57.6*	67.0	80.7*
Never or almost never go for a drink in a pub/club	11.2	17.8*	16.4	30.7*
Never or almost never go out for a meal	1.7	3.7	1.5	3.4
Never or almost never work in the garden	11.6	31.4*	12.9	34.2*

*indicates significantly different from children with no disability at $p < .05$; ^ $p < .1$

Figure 1: Family, friendships & social life at age 50: adjusted scores by disability status, significant differences by disability status only illustrated



Note: all scores significantly different from teenagers with no disability at $p < .05$

Next Steps: disability, friends, relationships and social activities as a young adult

We now turn to Next Steps, young adults who were interviewed in 2015 when aged 25. Table 2 shows that this later born cohort had poorer social outcomes even in early adulthood if they had been identified as disabled at school. Table 2 shows that around a quarter of non-disabled men had yet to leave the parental home by age 25, but this increased to 40.7% for those disabled in childhood. Although the pattern was the same for women, differences were not as pronounced (17.9% to 25.8%); but half of men and a third of women with severe disability were still at home. Two-thirds of men and women in their mid-20s were currently in a relationship or cohabiting, but this was lower for those with a disability. Around half of men (50.7%) and women (45.2%) with a disability were not in a relationship and they were also half as likely to have ever had sex: 5.6% to 16.1% for men, 5.9% to 12.6% for women. Despite this, disabled men and women were significantly

more likely to have become a parent by age 25. Around two-thirds of those with severe disability were not in a relationship and a quarter had never had sex. The increased level of parenthood among those with a disability was associated with less severe disabilities.

Turning to social support, around 1 in 20 men and women not previously disabled only saw friends a maximum of once or twice a year, but this doubled to 1 in 10 for men and further to 1 in 8 for women with a disability. Similarly, whereas around 1 in 10 young adults felt that people they knew were 'not at all' or 'only a little' willing to listen to them about their problems, this broadly doubled for those with teenage disability (18.6% men, 19.8% women). For both of these outcomes, the experiences were much starker for those with a severe disability, particularly among women. Around 1 in 5 men and women had little trust in other people, with this increasing to more than 1 in 4 for women with a disability. Disabled men and women also had a much more restricted social life, being much less likely to play sport or take exercise, go to the cinema or theatre, out for a meal or to the pub or bar. Once again, differences were more extreme for those with a severe disability.

Men with a disability were also more likely to have self-harmed in the last year compared to their non-disabled peers, although there were no differences by disability status across a range of bullying measures. When looking by severity of need, a significantly higher proportion of women with a severe disability, around a third, had experience of name-calling or other verbal abuse and of being bullied or gossiped about.

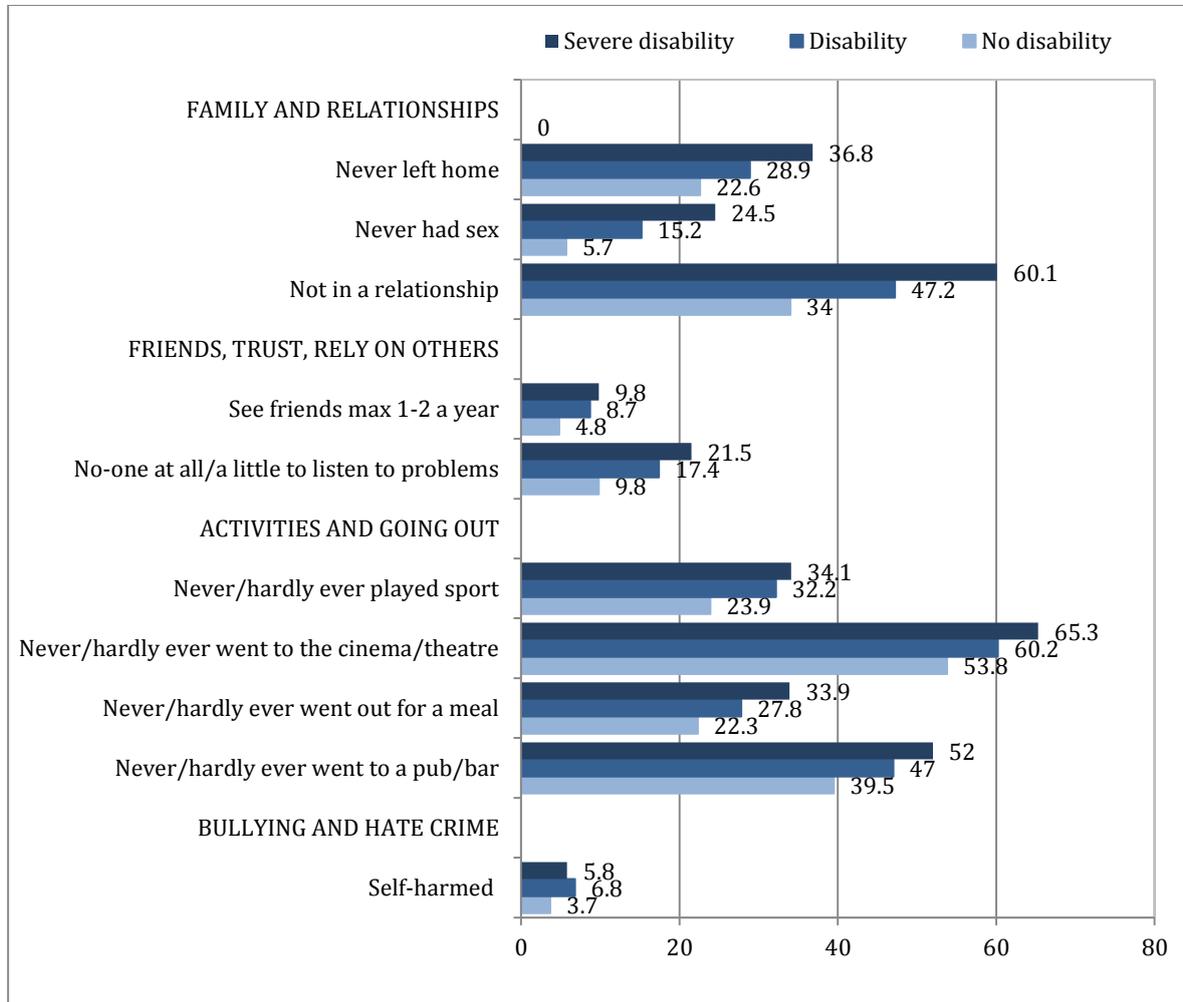
Even after taking into account family background and highest level of qualification, many of these gaps in social welfare persisted indicating an independent effect of disability over and above family background and the consequences of poorer educational outcomes. Figure 2 shows that this was particularly the case for family-related transitions – and the interaction models indicated disabled women were particularly likely to remain single – as well as for friendships and social activities.

Table 2: Friends, relationships, social life and being bullied at age 25 by childhood disability status

	Men			Women		
	No disability	Disability	Severe disability	No disability	Disability	Severe disability
Family and relationships						
Never had sex	5.6	16.0*	22.5*	5.9	12.6*	26.5*
Cohabiting	36.4	30.3^	19.2*	46.2	39.3^	25.1*
In a relationship	25.5	19.1*	21.4*	24.1	15.5*	6.6*
Not in a relationship	38.1	50.7*	59.4*	29.7	45.2*	68.3*
Has children?	18.0	26.6*	21.8	31.6	41.5*	22.4
Never left parental home	25.7	40.7*	50.2*	17.9	25.8*	36.4*
Friends, trusting, feeling able to rely on others						
How often meet up with friends? % max once/twice a year	4.0	10.4*	10.1*	5.1	12.7*	21.5*
How much people willing to listen to problems? % not at all/a little	10.2	18.6*	22.2*	9.0	19.8*	27.6*
How trusting of other people would you say you are? % little trust	18.5	19.8	20.1	18.9	29.1*	28.8
Activities and going out						
Never or almost never play sport or exercise/keep-fit	18.5	33.8*	36.0*	28.2	39.2*	43.7*
Never or almost never go to the cinema, concerts, theatre	49.1	63.6*	71.0*	56.5	69.4*	72.4*
Never or almost never go for a drink in a pub/bar	32.6	48.7*	56.4*	44.5	57.8*	60.5*
Never or almost never go out for a meal	21.3	35.4*	45.5*	21.4	33.0*	37.0*
Bullying and hate crime						
Self-hurt in last year	2.9	6.6*	4.3	4.4	8.6	11.3
Name calling / other verbal abuse	18.5	16.5	20.3	15.8	19.4	30.4*
Bullied / gossiped about / ignored	15.5	12.9	15.6	18.8	26.7*	36.7*

*indicates significantly different from children with no disability at $p < .05$; ^ $p < .1$

Figure 2: Friends and relationships at age 25: adjusted scores by disability status, significant differences by disability status only illustrated



Note: with the exception of self-harm among those with a severe disability, all scores significantly different from teenagers with no disability at $p < .05$.

MCS: disability, friendships, trust in others and experience of bullying as a teenager

Table 3 shows the social situation of contemporary teenagers, at the time they are identified as disabled in school. It indicates that in 2015, more than three times as many teenagers with a disability reported that they ‘never’ spent time with any friends at age 14; and 1 in 7 (12.2%) teenage boys with a disability said they did not have a close friend. Previous research has found that MCS children with an additional need or disability experienced more bullying in early primary school, and we see that this continued into secondary school. Teenagers with a disability were significantly more likely to have been picked on by other children ‘most days’ at age 14, although they had no more experience of being bullied online. Although teenage girls were more likely to self-harm than teenage boys, disability was only associated with significantly higher rates among

teenage boys. Teenage boys with a disability were also more likely to report not having someone to help then feel safe/happy, to not have anyone they feel close to and to report they did not have someone they trusted to turn to if they had a problem.

When looking at how the experiences differed by severity of need, teenage boys and girls with a more severe disability were almost always worse off across the measures. Far more felt they had no close friend, did not spend time with friends when not at school and did not have people to offer support or to make them feel safe, particularly so for boys. Teenagers at age 14 were also asked if they had been victims of crime. More than four in 10 of all teenagers had been called names or shouted at in a public place and a third of all boys had experience of physical violence against them. Teenage boys with a disability had more experience of being hit with a weapon or had a weapon used against them (7.3% to 4.3%). Again, in all categories the negative experience was heightened for those with a more severe disability although differences were not always statistically significant from those with no disability.

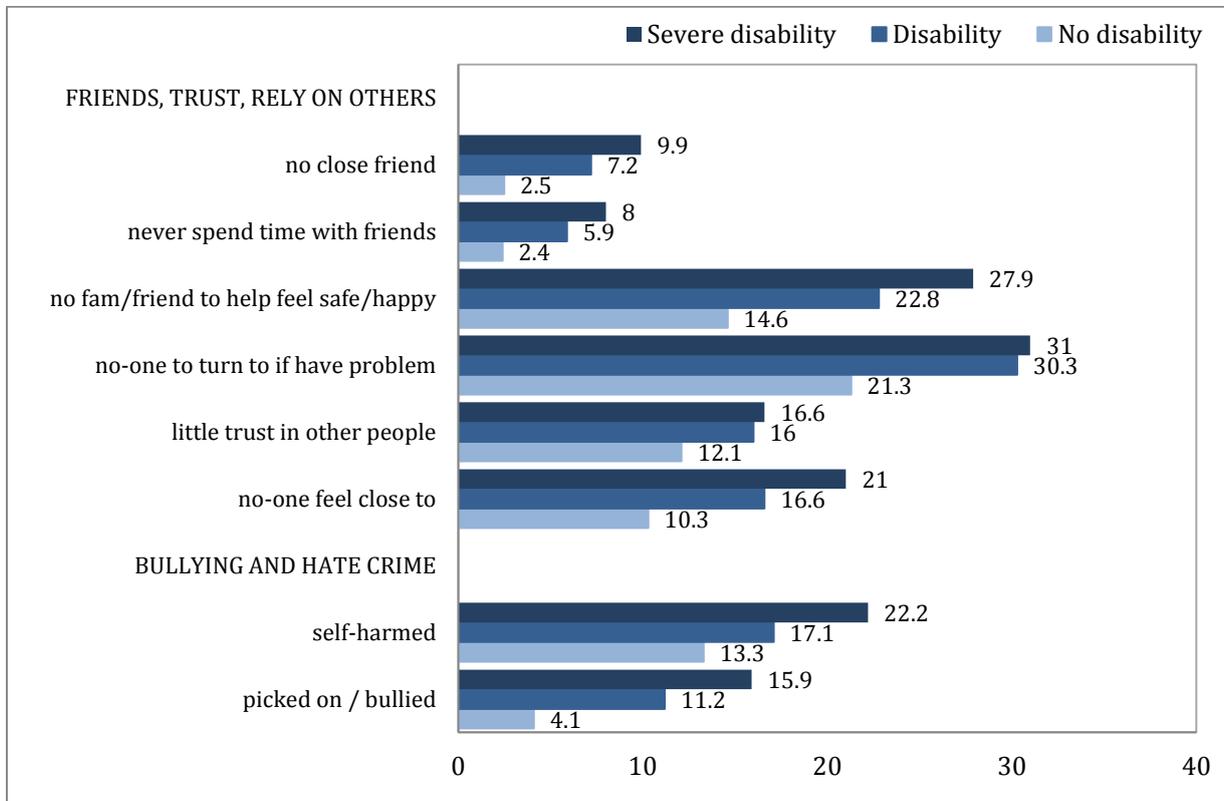
Controlling for cognitive ability and family background substantially attenuated a number of these differences between disabled and non-disabled teenagers. Nevertheless, significant gaps in risks of social isolation and in bullying and self-harm remained, particularly for those severely disabled, as shown in Figure 3. The models with interactions between gender and disability showed that it was disabled boys who were more likely to feel isolated: that is to not have a close friend, to not feel close to someone and to not have someone to make them feel safe and secure.

Table 3: Friends and well-being by disability status (MCS)

	Males			Females		
	No disability	Disability	Severe disability	No disability	Disability	Severe disability
Friends, trusting, feeling able to rely on others						
No close friend	3.5	12.2*	17.3*	2.0	5.7*	7.9
When not at school, how often do you spend time with your close friends? % < 1 month/never	9.2	20.9*	25.2*	8.4	20.1*	32.4*
When you are not at school, how often do you spend time with your close friends? % never	3.0	9.0*	12.7*	2.6	9.6*	17.6*
Little trust in other people (0-3/10)	8.7	12.1^	12.7	17.0	22.9	24.6
Have family/friend to help feel safe/happy (not/partly true)	13.7	24.2*	31.3*	15.7	21.2	20.0
Someone I trust to turn to if had a problem (not/partly true)	23.9	35.9*	38.1*	18.8	26.6^	25.5
No one I feel close to (partly/very true)	8.5	19.4*	24.0*	12.5	12.7	16.2
Bullying and hate crime						
How often do other children hurt you or pick on you on purpose? % most days	3.9	12.4*	16.1*	4.4	10.8*	19.2*
Ever self-harmed?	7.5	12.1*	14.2^	22.7	23.6	32.1
<i>In the past 12 months has anyone done any of these to you?</i>						
Insulted you, called you names, threatened or shouted at you in a public place, at school or anywhere else? % Yes	42.3	46.7	53.1*	45.0	46.8	55.7
Been physically violent towards you, e.g. pushed, shoved, hit, slapped or punched you? % Yes	30.1	33.9	34.2	15.7	21.1	28.0*
Hit you with or used a weapon against you? % Yes	4.3	7.3	8.9	2.4	4.7	10.8*

*indicates significantly different from children with no disability at $p < .05$; ^ $p < .1$

Figure 3: Friends, trust and bullying: adjusted scores by disability status, significant differences by disability status only illustrated



Note: all scores significantly different from teenagers with no disability at $p < .05$

Discussion

In this paper, we have highlighted the extent of social isolation and loneliness among one of the most vulnerable groups in our society, disabled people. We have shown some stark differences in levels of social contact and social support among those identified as disabled in childhood, and most of those differences cannot be (fully) accounted for by social origins or educational attainment. While the particularly poor social outcomes of older middle-aged adults invites attention to how social support might be better sustained across the life course, the fact that young people also face patterns of social exclusion, suggests that this is not (simply) the greater vulnerability linked to ageing and cumulative exclusion. Early intervention may be necessary to break future vicious cycles of social exclusion and the negative consequences of lack of social support (Berkman et al. 2000).

While we used age-specific measures of social contact and social interaction, what was notable was that disadvantage was observed across all domains of social experience, domains which have been themselves linked to the existence or risk of loneliness. A lack of a close friend, a crucial element of the way that social support can mitigate environmental or health insults, was a consistent feature of the patterns across all three generations: those who were disabled tended to

see friends infrequently compared to their non-disabled peers. Among adults, fewer of those with teenage disability went on to experience a close relationship or have their own family. Notably, while some differences in the experience of disabled youth were linked to their poorer socio-economic circumstances, in terms of both family background and educational attainment, these factors could not account for many of the gaps in social outcomes observed. Indeed, for the older cohort in particular, estimates scarcely changed in the adjusted compared to the unadjusted analysis. This indicates the strength of the ways in which disability affects social outcomes, and the lack of alternative pathways or support for those leaving school with a disability in the mid-1970s. For the younger cohorts, effects were attenuated when social background and educational attainment were controlled, but the outcomes still indicated a pattern of more limited social engagement and opportunities for social development. One contrast across the cohorts was that, while for the older age group women appeared to be particularly socially disadvantaged across the measures, for the youngest age group, it was boys who were more likely to be isolated. This may reflect changing normative understandings of and responses to disability as a gendered phenomenon.

Successive governments have agreed that those with disabilities and additional needs are a constituency deserving of a better, fairer deal out of life. While evidence about progress in work and employment is somewhat mixed, we have drawn attention to the ways in which crucial aspects of fully lived lives are more limited or missing for those with disabilities. This comes with costs for individuals themselves but also for society more widely as lack of social support is linked to greater morbidity (James, 2008). Yet recent, well-documented cuts to social care budgets (Leonard Cheshire, 2018) and consequently in services for disabled people are only like to increase levels of social isolation. At the younger end, the 2015 campaign by SENSE, "*A right to friendship?*" identified that social and activity groups based around common interests were key for enabling those with disabilities to build 'real' friendships (SENSE, 2015). This highlights the importance of inclusive youth clubs and activities to support the current – and future – well-being of disabled young people.

Our research is timely given the issues of social isolation and loneliness and their consequences are currently high up on the political agenda in the UK (Department for Digital, Culture, Media and Sport, 2018). By looking at identification of a disability in the teenage years in different generations, we can see how additional needs in childhood impact on social relationships and aspects of isolation over the lifecourse. We find that British teenagers identified with an additional need or disability are at risk of increased levels of social isolation compared to teenagers who were not identified with a disability, and that this is true for teenagers today as well as for those from previous generations. By identifying disability in childhood, we have illustrated that the later life social isolation cannot be a cause rather than a consequence of disability, nor (solely) the cumulative consequence of disadvantage in early life. This invites greater attention to and understanding of the direct mechanisms linking disability to social isolation and evaluation of its consequences. This is necessary if those with a disability have an equal chance to fulfil their potential and lead an independent life.

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Appendix

Original variable and answer categories	Recoded values
Friends, trust and feeling able to rely on other people	
<i>NCDS</i>	
If you were sick in bed how much could you count on the people around you to help out. 1 ...Not at all 2 A little 3 Somewhat 4 A great deal?	3/4 = 0; 1 / 2 = 1 'not at all/a little'
If you needed to talk about your problems and private feelings how much would the people around you be willing to listen... 1 ...Not at all 2 A little 3 Somewhat 4 A great deal?	3/4 = 0; 1 / 2 = 1 'not at all/a little'
In the past two weeks, how often have you gone out to visit friends? 1 Not at all 2 Once or twice 3 Three to six times 4 More than six times	2/4 = 0; 1 = 1 'not at all'
In the past two weeks, how often have you had friends visit you? 1 Not at all 2 Once or twice 3 Three to six times 4 More than six times	2/4 = 0; 1 = 1 'not at all'
In the past two weeks, how often have you had contact by phone or letter with friends? 1 Not at all 2 Once or twice 3 Three to six times 4 More than six times	2/4 = 0; 1 = 1 'not at all'
Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? 1 Most people can be trusted 2 Can't be too careful 3 Other/depends	2/3 = 0; 1 = 1 "most trusted"
<i>Next Steps</i>	
How often do you meet up with any of your friends? 1 Three or more times a week 2 Once or twice a week 3 Once or twice a month 4 Every few months 5 Once or twice a year 6 Less than once a year 7 Never 8 Not applicable - do not have any	1/4 = 0; 5/8 = 1 'max once/twice a year'
If you needed to talk about your problems and feelings, how much would the people around you be willing to listen? 1 Not at all 2 A little 3 Somewhat 4 A great deal	3/4 = 0; 1/2 = 1 'not at all/a little'
On a scale from 0-10 where 0 means you are not at all trusting of other people and 10 means you are extremely trusting of other people, how trusting of other people would you say you are?	4/10 = 0 'higher trust' 0/3 = 1 'little trust' 5/10 = 0 'higher trust' 0/4 = 1 'little trust'
<i>MCS</i>	
The next questions are about close friends. By close friends we mean other young people you feel at ease with or who you can talk to about things that are private. Do you have any close friends? 1 Yes; 2 No	2 = 0 'no'; 1 = 1 'yes'
When you are not at school, how often do you spend time with your close friends? 1 Most days; 2 At least once a week; 3 At least once month; 4 Less often than once a month; 5 Never	1/3 = 0; 4/5 = 1 '<1xmonth/never' 1/4 = 0; 5 = 1 'never'
I have family and friends who help me feel safe, secure and happy. 1 Very true; 2 Partly true; 3 Not true at all	3 = 0; 1/2 = 1 'not/partly true'

Original variable and answer categories	Recoded values
There is someone I trust whom I would turn to for advice if I were having problems. 1 Very true; 2 Partly true; 3 Not true at all	3 = 0; 1/2 = 1 'not/partly true'
There is no one I feel close to. 1 Very true; 2 Partly true; 3 Not true at all	3 = 0; 1/2 = 1 'not/partly true'
On a scale from 0-10, where 0 means not at all and 10 means completely, how much would you say you trust other people? 0 Not at all....10 Completely	4/10 = 0 'higher trust; 0/3 = 1 'little trust'
Activities and going out	
<i>NCDS</i>	
We are interested in the things people do in their leisure time. Please indicate how frequently you...	
1 At least once a week 2 At least once a month 3 Several times a year 4 Once a year or less 5 Never/almost never	
go or walking or swimming	1 / 4 = 0; 5 = 1 'Never/almost never'
watch live sport	1 / 4 = 0; 5 = 1 'Never/almost never'
go to the cinema	1 / 4 = 0; 5 = 1 'Never/almost never'
go to a concert. theatre etc	1 / 4 = 0; 5 = 1 'Never/almost never'
have a meal in a restaurant/cafe	1 / 4 = 0; 5 = 1 'Never/almost never'
How frequently do you go for a drink at a pub/club	1 / 4 = 0; 5 = 1 'Never/almost never'
<i>Next Steps</i>	
Please say how often you do play sport or exercise such as going walking, cycling, swimming or attending keep-fit classes. 1 At least once a week 2 At least once a month 3 Less often 4 Never	1/3 = 0; 4 = 1 'never' 1/2 = 0; 3/4 = 1 'less often/never'
Please say how often you go to the cinema, concerts, theatre or other live performances. 1 At least once a week 2 At least once a month 3 Less often 4 Never	1/3 = 0; 4 = 1 'never' 1/2 = 0; 3/4 = 1 'less often/never'
Please say how often you have a meal in a restaurant or café. 1 At least once a week 2 At least once a month 3 Less often 4 Never	1/3 = 0; 4 = 1 'never' 1/2 = 0; 3/4 = 1 'less often/never'
Please say how often you go to a pub/bar or club. 1 At least once a week 2 At least once a month 3 Less often 4 Never	1/3 = 0; 4 = 1 'never' 1/2 = 0; 3/4 = 1 'less often/never'
Bullying and hate crime	
<i>Next Steps</i>	
In the past year have you hurt yourself on purpose in any way? 1 Yes 2 No	2 = 0 'no'; 1 = 1 'yes'
In the past 12 months, have you experienced name calling, being the butt of jokes or other verbal abuse 1 Yes 2 No	2 = 0 'no'; 1 = 1 'yes'

Original variable and answer categories	Recoded values
In the past 12 months, have you had gossip spread about you, been ignored or other emotional abuse 1 Yes 2 No MCS	2 = 0 'no'; 1 = 1 'yes'
How often do other children hurt you or pick on you on purpose? 1 Most days 2 About once a week 3 About once a month 4 Every few months 5 Less often 6 Never	1/5 = 0; 6 = 1 'most days'
In the past year have you hurt yourself on purpose in any way? 1 Yes 2 No	2 = 0 'no'; 1 = 1 'yes'
In the past 12 months has anyone done any of these things to you? Insulted you, called you names, threatened or shouted at you in a public place, at school or anywhere else? 1 Yes 2 No	2 = 0 'no'; 1 = 1 'yes'
Been physically violent towards you, e.g. pushed, shoved, hit, slapped or punched you? 1 Yes 2 No	2 = 0 'no'; 1 = 1 'yes'
Hit you with or used a weapon against you? 1 Yes 2 No	2 = 0 'no'; 1 = 1 'yes'