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How do moving and other major life events impact mental health? A longitudinal analysis of UK children

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A B S T R A C T

Research has suggested that children who move home report poorer mental health than those who remain residentially stable. However, many previous studies have been based on cross sectional data and have failed to consider major life events as confounders. This study uses longitudinal data from ALSPAC, a UK population based birth cohort study, and employs within-between random effect models to decompose the association between moving in childhood and poor mental health. Results suggest that while unobserved between-individual differences between mobile and non-mobile children account for a large portion of this association, within-individual differences remain and indicate that moving may have a detrimental impact upon subsequent mental health. There is heterogeneity in children's response to moving, suggesting that a dichotomy of movers vs stayers is overly simplistic.

1. Introduction

Mental ill health is one of the largest contributors to the global burden of disease and a major global health priority, inflicting a number of health, social and personal burdens upon individuals (Whiteford et al., 2013). Between 10% and 20% of children and adolescents worldwide suffer from mental health problems (Kieling et al., 2011), a rise from 10% at the turn of the millennium (Meltzer et al., 2000). In the UK recent estimates put this figure between 12.5% (Beardsmore, 2015) and 20% (Fink et al., 2016), depending on the definition of poor mental health. Childhood and adolescence are critical developmental periods for identification and intervention of mental ill health because problems in early life are associated with both higher likelihood (Helliwell et al., 2015) and longer durations (Kovacs et al., 1984) of mental ill health in adulthood. Mental illness costs the UK between £70 and £100 billion a year, of which between £14 and £20 billion is spent on health and social care costs (Mental Health Foundation, 2015). The socioeconomic patterning of mental health has been studied in detail, with children growing up in households characterised by low family socioeconomic position (SEP) suffering from an elevated risk of problems compared to those in high SEP families (Reiss, 2013). However, beyond these broad patterns there is still a lack of understanding on the specific social pathways that may contribute to child mental illness.

1.1. Moving house and mental health

One potential social pathway is the role of place, and in particular how transitions between places may be linked to mental health. Evidence suggests that individuals who are exposed to moving house (commonly termed residential mobility), report poorer mental health than those who do not (Jelleyman and Spencer, 2008; Morris et al., 2016b). This is particularly true for children and adolescents; findings from the UK suggest that young families with children who move have poorer mental health than those who remain residentially stable (Tunstall et al., 2012, 2010), and that children and adolescents are particularly vulnerable to deleterious mental health effects of moving (Anderson et al., 2014; Flouri et al., 2013). Such effects are thought to operate through a number of pathways including weakened social ties (Pribesh and Downey, 1999), disturbance to social networks (Coleman, 1988), 'social stress' (Silver et al., 2002), household disruption (Haveman et al., 1991), social isolation (Stubblefield, 1955), and

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reductions in parent-child interactions (Anderson et al., 2014). Similar findings have been observed in the USA showing a dose response relationship (Susukida et al., 2015) and both short and long term negative associations between moving in childhood and subsequent mental health (Bures, 2003; Gilman et al., 2003; Oishi and Schimmack, 2010; Simpson and Fowler, 1994). However, it is important to note that there have been conflicting findings with a number of studies failing to replicate associations between moving and poor mental health (Gambaro and Joshi, 2016; Jelleyman and Spencer, 2008; Stoneman et al., 1999; Verropoulou et al., 2002). The conflicting results from these studies cannot be explained by a common research design or analytical method, though there is a suggestion that a detailed account of family circumstances may lessen the apparent association between moving and poor mental health. We return to this shortly.

1.2. Neighbourhoods and selective migration

Specific characteristics of places play an important role in the patterning of mental health in addition to individual and family level factors. Studies have long shown that mental health is poorer in socially, economically and environmentally deprived neighbourhoods compared to less deprived neighbourhoods (Kim, 2008; Leventhal and Brooks-Gunn, 2000; Mair et al., 2008). With respect to people moving through different types of neighbourhoods, studies have found that making moves to more deprived neighbourhoods is negatively associated with mental health over and above the effect of moving (Tunstall et al., 2014, 2012). This implies that varying exposure to such conditions is an important factor in the development of mental ill health under the assumption of instantaneous effects. The semi-randomised Moving To Opportunity (MTO) experiment in the USA has provided evidence that children who move from extreme high to low poverty neighbourhoods experience a reduction in mental health problems in adolescence and early adulthood (Bridge et al., 2012; Leventhal and Brooks-Gunn, 2003; Ludwig et al., 2012). The MTO studies have been substantially critiqued however (Clark, 2008; Manley and van Ham, 2012). There has long been debate as to whether the association between neighbourhood deprivation and poor health is due to a causal neighbourhood effect or a selection effect (Kawachi and Subramanian, 2007; Oakes, 2004) and very few studies have utilised data and methods suitable for answering such questions. However, recent studies using longitudinal data have suggested that the relationship between neighbourhood deprivation and poor health may be due to selective migration of unhealthy individuals into deprived areas, rather than a causal effect from neighbourhood deprivation to poor health (Jokela, 2015, 2014).

1.3. The impact of life events on mental health

One aspect that has been commonly overlooked in studies of mental health and migration is that of major life events (Morris et al., 2016b). It has long been accepted that adverse life experiences play a role in the onset of psychological conditions (Rutter, 1981), with a body of research suggesting that adverse life events and childhood adversity are strongly associated with poor subsequent mental health (Dong et al., 2005; Felitti et al., 1998). This finding is consistent across a range of events including union dissolution (Strohschein et al., 2005), parental death (Trotta et al., 2015), childhood abuse (Varese et al., 2012), unemployment and job loss (Paul and Moser, 2009), and 'total' adversity (Trotta et al., 2015). Experience of each of these events has been associated with poorer mental health and the experience of such social adversity in adolescence has also been linked to poor mental health development trajectories into adulthood (Rajaleid et al., 2016). In a detailed analysis of mental health survey data from 21 countries, Kessler et al. (2010) found that all childhood adversities examined were associated with psychiatric disorders, and that this association increased with multiple adversities.

1.4. Limitations of the literature

Many studies of moving and mental health do not examine the impact of life events, raising questions over the validity of findings. Moving is not an exogenous process: rather, it is a highly complex set of processes that are influenced by a wide range of factors, including major life events (Morris, 2017), which also directly influence mental health. However, few studies examining the impact of moving on mental health have considered the occurrence of major life events. Because of the robust relationship between life events and both moving and mental health, excluding such events is likely to introduce bias due to unobserved confounding and raises the possibility of spurious associations between moving and mental health (Morris et al., 2016b). Those studies that have accounted for life events find that their occurrence has a strong attenuating effect on associations between moving and poor mental health, either eliminating this association (Dong et al., 2005; Gambaro and Joshi, 2016) or heavily attenuating it (Flouri et al., 2013; Tunstall et al., 2015). These findings suggest that while moving house may be a constituent part of a child's story, it is likely the events that lead to moves rather than the moves themselves which are the main reason for differences between movers and stayers (Gambaro and Joshi, 2016).

1.5. Study aim

In this study we test the longitudinal association between moving in childhood and subsequent mental health, and determine whether this association is robust in the presence of major life events as confounders or if these induce spurious associations. Further, we decompose the association between moving and mental health to determine the extent to which any changes in mental health are due to the effects of moving or due to factors that are more common in mobile than non-mobile children. The use of longitudinal data allows us to model directional associations and provides greater freedom to draw causal inferences than the cross-sectional approaches that remain widespread throughout the literature. Given the ongoing health selection debate over whether moving causes poor mental health or poor mental health causes people to move, such a longitudinal approach allows us to correctly structure and test for temporal effects of moving to mental health.

2. Data and methods

2.1. Data source

We use data from the Avon Longitudinal Study of Parents and Children (ALSPAC). All pregnant women resident in the (former) Avon Health Authority area in South West England with an expected date of delivery between April 1991 and December 1992 were eligible to enrol. The full sample consists of 14775 live births. After birth, data were primarily collected from the study mothers and then from children via regular self-completion questionnaires and hands on assessments from the age of seven.[1] The ALSPAC cohort is largely representative of the UK population when compared with 1991 Census data; however, there is under representation of ethnic minorities, single parent families, and those living in rented accommodation. For full details of the cohort profile and study design see Boyd et al. (2013) and Fraser et al. (2013).[2]

[1] The study website contains details of all the data that is available through a fully searchable data dictionary (http://www.bristol.ac.uk/alspac/researchers/access/).

[2] Ethical approval for the study was obtained from the ALSPAC Ethics and Law Committee and the Local Research Ethics Committees.