Social Science & Medicine 118 (2014) 97–107

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

The general and mental health of movers to more- and less-disadvantaged socio-economic and physical environments within the UK

Helena Tunstall [a, *], Richard Mitchell [b], Jamie Pearce [a], Niamh Shortt [a]

[a] University of Edinburgh, Edinburgh EH8 9XP, United Kingdom
[b] University of Glasgow, Glasgow G12 8RZ, United Kingdom

ARTICLE INFO

Article history:
Received 22 November 2013
Received in revised form
5 April 2014
Accepted 16 July 2014
Available online 29 July 2014

Keywords:
UK
General health
Mental health
Socio-economic deprivation
Physical environment
Healthy migrant effects
Selective migration
Neighbourhoods

ABSTRACT

Residential mobility may play an important role in influencing both individual health, by determining individual exposures to environments, and area health, by shaping area population composition. This study is the first analysis of migration within the UK to compare general and mental health among adults by age group and consider moves between neighbourhoods with different levels of both socio-economic and physical environment disadvantage. The analysis assesses 122,570 cases from the annual British Household Panel Survey, 1996–2006, based upon pooled data describing moves between consecutive waves of the survey. It assesses the rates and binary logistic regression model odds of self-reported general health and mental health problems of movers and stayers by age group. It also compares movers between Census Area Statistics wards in the UK with different levels of Carstairs and Multiple Environmental Deprivation Index (MEDIx) scores. At all ages, movers had similar or higher odds of poor general and mental health relative to non-movers. Risk of mental health problems were particularly elevated among movers and remained significant after adjustment for socio-demographic variables in most age groups. In adjusted analysis of all adults odds of poor general and mental health were most elevated among movers to more socio-economically deprived areas, with the highest odds for mental health (1.54 95% CI 1.27–1.86). In contrast, risk of poor mental health among total adults was greatest among movers to better physical environments (1.40 95% CI 1.16–1.70). This study therefore finds little evidence of 'healthy migrant effects' among recent movers within the UK and suggests movers have particularly elevated risk of mental health problems. It also indicates that selective migration may not contribute to poor health found in UK neighbourhoods with multiple physical environment deprivation. Further analysis should explore why people with mental health problems are more likely to move to socio-economically deprived neighbourhoods.

1. Introduction

Selective migration is commonly believed to have an important influence upon both individual health, by determining individual exposures to environments, and area health, by shaping area population composition (Boyle, 2004; Rogerson and Han, 2002; Spallek et al., 2011). However, research regarding the health of migrants, and how their selection relates to the characteristics of areas they move between, has neglected some types of health outcomes and environments. This study uses British Household Panel Survey (BHPS) data to describe the relationship between individual health and residential mobility between neighbourhoods in UK. The analysis builds upon previous research in the UK firstly, by comparing the general and mental health of migrants of different ages and secondly, by assessing moves between neighbourhoods with different levels of both socio-economic and physical environment deprivation.

1.1. Individual health status and migration selectivity

'Healthy migrant theory' suggests migrants have better health than non-movers (Urquia and Gagnon, 2011). Much of the evidence supporting this healthy migrant effect has originated from research into the health of international migrants. For example, a number of studies have demonstrated that immigrants of Latino origin in the

* Corresponding author.
E-mail address: Helena.Tunstall@ed.ac.uk (H. Tunstall).

http://dx.doi.org/10.1016/j.socscimed.2014.07.038
0277-9536/

United States, and Turkish and Moroccan origin in France and Germany, have low death rates compared to native-born populations, despite their low levels of education and income (Khlat and Darmon, 2003; Ruiz et al., 2013). It has been proposed that this occurs in part due to selection; both direct health selection if health status itself supports the ability to move and/or indirect selection if material, educational and occupational circumstances required to make a move are associated with better health. However, research that has compared the health of international immigrants to populations in their country of origin has produced mixed results (Landale et al., 2006; Marmot et al., 1984; Rubalcava et al., 2008; Salmond et al., 1985).

Studies of *internal* migrants further emphasise a complex picture of migrant health. Whilst movers as a whole within the UK have better health than non-movers (Champion, 2005) research completed in developed countries indicates that a number of types of movers have poor health (Bentham, 1988; Cole et al., 2006; Evandrou et al., 2010; Jelleyman and Spencer, 2008; Larson et al., 2004; Martikainen et al., 2008; Norman et al., 2005; Tunstall et al., 2012; Tunstall et al., 2010; Verheij et al., 1998). These groups include pregnant women, mothers and their infants and young children, people in mid-life and old age, frequent movers, people moving short distances, and those moving due to negative life circumstances.

The relationship between propensity to migrate, health and *age* may be particularly important in understanding the healthy migrant effect. In the UK, young adults are much more likely than other age groups to have moved within the country in the previous year, and then rates of mobility among adults decline through midlife to reach their lowest levels in old age (Bailey and Livingston, 2005; Champion, 2005). Most studies from Europe, Australia and USA indicate that young adult movers are more likely to have good health than those who do not migrate, but by midlife or older ages movers are more likely to have *worse* health than non-movers (Bentham, 1988; Evandrou et al., 2010; Larson et al., 2004; Martikainen et al., 2008; Norman et al., 2005; Verheij et al., 1998).

The relatively good health of movers at younger ages may reflect their socio-economic characteristics rather than a direct relationship with health status. In the UK, exceptionally high rates of mobility among young adults are driven, in part, by moves related to higher education, which remains selective for higher socio-economic position (Bailey and Livingston, 2005; Champion, 2005). In contrast, research assessing mothers and their infants and children has found both lower socio-economic status and poorer health among those that were more residentially mobile (Jelleyman and Spencer, 2008; Tunstall et al., 2012; Tunstall et al., 2010). It has been suggested that the socio-demographic characteristics of younger movers can explain virtually all differences in their health (Jongeneel-Grimen et al., 2011). In contrast, the possibility that poor health is directly related to mobility in mid-life and old age has been supported by studies which have found that this association persists after adjustment for socio-demographic factors (Evandrou et al., 2010; Halliday and Kimmitt, 2008; Larson et al., 2004).

Research that has assessed how *change* in health status is related to mobility may provide stronger evidence of direct health selection. A longitudinal study of migrant health in the USA demonstrated that changes in health conditions were unrelated to propensity to move at ages under 45 years, but at older ages the advent of poor health was associated with mobility (Findley, 1988). A UK study of people aged over 50 years found rates of migration were elevated among people experiencing both improvements and declines in general health status (Evandrou et al., 2010). The relationship between migration and health status is however likely to vary between health outcomes. New acute health problems may increase propensity to move while some chronic health problems could discourage mobility (Boyle et al., 2002). Most studies of the health characteristics of movers within the UK have only considered broad measures of morbidity and mortality (Bentham, 1988; Connolly and O'Reilly, 2007; Norman et al., 2005). Notably, studies that have considered mental health have indicated that there are high rates of mobility among people with severe mental illness (Tulloch et al., 2011; Tulloch et al., 2010). Analysis of psychiatric inpatients in the UK has found residential moves were concentrated in the time period immediately following discharge indicating that severe mental illness can be a direct cause of residential instability (Tulloch et al., 2011).

Overall, this evidence has led to the suggestion that the image of migrants as healthy adults moving to take advantage of opportunities may largely represent a 'myth' which is unrepresentative of the experience of many internal migrants (Larson et al., 2004). Evidence for direct health selection of internal migrants is stronger among older age groups. However, amongst these groups internal migration may be associated with poor health. For the population as a whole, evidence that direct selection for good health underlies the propensity to move is quite weak. This suggests therefore that a central part of the healthy migrant hypothesis may not apply to migration within countries (Urquia and Gagnon, 2011).

1.2. Moves to healthy and unhealthy environments

Migration itself may affect individual health by shaping exposure to relatively better or worse social and physical environments (Spallek et al., 2011). Residential moves within the UK have in recent decades been disproportionately towards more socio-economically advantaged and rural environments, except among young adults (Bailey and Livingston, 2007; Champion, 2001). There are also associations between the characteristics of migrants and their environments of origin and destination. Migrants in the UK and Europe who move towards more socio-economically deprived neighbourhoods generally have worse self-rated heath and health-related behaviour and higher mortality than those moving towards less deprived areas (Connolly and O'Reilly, 2007; Martikainen et al., 2008; Norman et al., 2005; Tunstall et al., 2012; van Lenthe et al., 2007). The limited research that has compared indicators of mental distress and illness to those of general and physical health, analysing mothers of young children in the UK (Tunstall et al., 2012) and adults aged 16–54 years in Canada (Curtis et al., 2009), has indicated that poor mental health may be particularly strongly associated with moves to more socio-economically deprived areas.

These socio-spatial patterns suggest that migration may contribute to the accumulation of poor health among unhealthy individuals. However, there is evidence that the relationship between neighbourhood health, area socio-economic deprivation and migration may vary with degree of deprivation and individual age (Connolly and O'Reilly, 2007; Jongeneel-Grimen et al., 2013; Martikainen et al., 2008; Norman and Boyle, 2014; Norman et al., 2005; Tunstall et al., 2012; van Lenthe et al., 2007). In addition, research exploring the relationships between migration, health and the characteristics of the origin and destination area has largely focused on area socio-economic status. Other area characteristics have rarely been considered, in particular, physical environment, despite a wealth of evidence that factors such as climate, air pollution, and proximity to polluting industry may affect health (Richardson et al., 2010a).

Environmental justice research has focused upon assessing the greater exposure of disadvantaged populations to hazardous physical environments (Been and Gupta, 1997). However, relatively few studies have explored whether socially selective migration can account for these disproportionate environmental burdens.