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Urban and rural differences in risk of admission to a care home: A census-based follow-up study

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ABSTRACT

Research on admissions to care homes for older people has paid more attention to individual and social characteristics than to geographical factors. This paper considers rural–urban differences in household composition and admission rates.

Cohort: 51,619 people aged 65 years or older at the time of the 2001 Census and not living in a care home, drawn from a data linkage study based on c.28% of the Northern Ireland population.

Living alone was less common in rural areas; 25% of older people in rural areas lived with children compared to 18% in urban areas. Care home admission was more common in urban (4.7%) and intermediate (4.3%) areas than in rural areas (3.2%). Even after adjusting for age, sex, health and living arrangements, the rate of care home admission in rural areas was still only 75% of that in urban areas.

People in rural areas experience better family support by living as part of two or three generation households. Even after accounting for this difference, older rural dwellers are less likely to enter care homes; suggesting that neighbours and relatives in rural areas provide more informal care; or that there may be differential deployment of formal home care services.

1. Introduction

In England it has been estimated that care home placements account for 57% of local authority spending on social care for older people and costs for a person admitted with an average length of stay would amount to over £65,000 (Forder and Fernandez, 2011). Nursing and residential care is a costly means of meeting the needs of older people for whom the usually preferred option is to remain in their home whenever possible; this has been mirrored by UK policy objectives since the 80s/90s (Griffiths and Britain, 1988; Secretary of State for Northern Ireland, 1990). It is therefore important that the factors that increase or reduce the likelihood of admission to a care home are more fully understood.

Much of the research on admissions to residential and nursing home care has focused on differences associated with health and disability (Miller and Weissert, 2000), family support (McCann et al., 2011) or socio-economic circumstances (Nihtila and Martikainen, 2007; McCann et al., 2012). Less is known about geographical variation, in particular differences between urban and rural areas. This is important given the increasing urbanisation of society and the known differences in demographic characteristics across the urban/rural spectrum.

Influences of rural versus urban residence on care home admission could be positive or negative, and this balance may depend on context. On the one hand residence in a rural area, particularly a remote rural area, may lead to greater difficulty in accessing supportive community services and maintaining social ties which would tend to increase rates of admission. Studies from the US have reported that older people in rural areas are admitted to nursing homes at lower levels of disability and have longer stays than urban residents (Coburn et al., 2003; Bolin et al., 2006) although other studies have found no such differences (Penrod, 2001). A review by Miller concluded that not enough was known about variation in rates of admission across urban and rural areas in the US (Miller and Weissert, 2000) for definitive conclusions to be drawn, with a handful of studies noting a association between rurality and health, and fewer still showing an association with care home admission risk, one suggesting lower risk (Wolinsky, 1992) and another higher risk (Salive et al., 1993) in urban areas. This was echoed by a review in the UK (Watt et al., 1994), which similarly noted the lack of evidence for urban/rural variations in health outcomes. The present authors identified two further studies showing a lower (Nihtila and Martikainen, 2007) or marginally lower risk in rural areas (Tomiak et al., 2000). None

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of these papers assessed compositional differences between areas, or studied why such differences may arise.

Many factors known to influence admission to a care home are also known to vary across the urban–rural spectrum; on balance, these should lead to higher admission risk in urban areas. Poor health leading to dependency is one of the major determinants of admission and it is recognised that health may be better and relative mortality lower in rural areas (Graunt, 1977; O'Reilly et al. 2007; Van Hooijdonk et al., 2008); indeed the higher mortality rates in urban areas will also increase the likelihood of widow(er) hood, which is an independent risk factor for admission (Grundy and Jitlal, 2007). Emotional or practical support within the household also reduces rates of admission (McCann et al., 2011) and there is evidence that older people in larger conurbations are more likely to live alone (Northern Ireland Statisticsand Research Agency, 2010). Urban areas also tend to have greater concentrations of disadvantage which is also associated with increased admission risk. In addition, the lower levels of home ownership in cities may increase risk of admission; the authors have previously demonstrated that housing tenure reduces admission risk, potentially due to increased levels of informal caregiving (and perhaps paid care) provided by the family of homeowners (McCann et al., 2012).

Urban/rural variation in the social environment is a key issue. The importance of support within the home for protecting health is established (McCann et al., 2011), but the extent to which this varies across areas has not been established. Furthermore, the potential influence of support from outside the household is less clear. Some studies have suggested that there is a tradition of mutual aid in rural communities (Shucksmith and Philip, 2000) and that instrumental support from neighbours and social cohesion in neighbourhoods may act as a buffer against the adverse effects of being single or poor on the wellbeing of older adults (Cramm et al., 2013). Others have suggested a greater degree of community interconnectedness in rural areas, with people having more frequent contact and support from family and from their neighbours than occurs in urban areas (Amato, 1993; Hofferth and Iceland, 1998). A recent Irish study found that older people in rural areas had worse health and lower rates of social participation than their urban counterparts, but nevertheless more social resources overall (Burholt and Scharf, 2013). Consistent with this, one previous (now rather old) study of England and Wales found lower rates of care home admission for rural areas with small land holdings (Harrop and Grundy, 1991).

If rural residence is associated with greater levels of family and neighbourhood support, one might expect two things; (a) different household structures in rural compared to urban areas, and (b) that the increased risk of institutional admission associated with living alone should be lower in rural than urban areas, due to greater community integration and better support from outside the home in rural compared to urban areas.

Using data from the Northern Ireland Longitudinal Study, this paper aims firstly, to investigate urban/rural differences in household structures, and secondly to assess whether older people living alone have lower admission rates to care homes in rural areas than in urban areas, a differential which would suggest greater availability of community support.

2. Methods

2.1. Cohort members

The Northern Ireland Longitudinal Study (NILS) is a record linkage study formed by linking data from the Northern Ireland Health Card Registration system to 2001 Census returns and to administrative data for a representative sample of approximately 500,000 people in Northern Ireland (c28% of the population). The cohort and linkages are described in detail elsewhere (O'Reilly et al., 2011). This study focussed on a subset of this cohort; people who, at the time of the Census, were 65 years or older and not living in a care home. The use of the NILS for research has been approved by the Office for Research Ethics Committees Northern Ireland (ORECNI).

2.2. Care home data

Information from the Regional care home inspectorate, which has a statutory responsibility for registering care homes (including nursing homes), was used to identify cohort members living in a care home at the time of the Census (who were excluded from analysis), and to identify admissions to care homes over the six years following the Census. This methodology was used in preference to Census information on communal establishments as the Census may miss some homes (Banks et al., 2006). The inspectorate's care home list excludes other forms of housing for older people such as supported living or 'Fold' housing schemes (staffed apartment blocks for people with low care needs). Care home admission during follow up was determined using a health registration database, which holds demographic and address information for almost the entire population as part of entitlement to free health care. When people update their residential address with their healthcare practitioner, information on the new address is automatically updated on the central health registration database. This information, when matched against the list of care home addresses held by the care home inspectorate, was used to identify moves into care homes. This process excludes temporary care in homes, as only permanent address changes are registered.

2.3. Individual characteristics

Data relating to cohort members were obtained from 2001 Census returns. Measures used in this analysis included age, sex and two measures of self-reported health status—general health in the last 12 months (GH) and the presence of an illness or disability that limits day to day activities (LLTI). The LLTI question had a yes/no response; the GH question offered three responses – good, fairly good, or not good. Housing tenure, categorised as owner or renting, was also included as previous research has shown that owner occupiers have lower risks of care home admission than renters (McCann et al., 2012).

Questions on the relationship to other people in the household were used in conjunction with marital status to derive a measure of household structure. There were four categories of living alone: never married, widowed, separated/divorced and married. For those living with others; the categories were; living as a couple, a couple plus children (of any age) only, couple plus any others, siblings only, children only, and any others (McCann et al., 2011).

2.4. Area characteristics

There is no universally agreed definition of what constitutes an 'urban' or 'rural' area (Carr-Hill et al., 2005) but in the UK, an approach based on population size, density and access to services has been used to produce an official classification of settlement bands. In Northern Ireland, there are eight settlement bands (Northern Ireland Statistics and Research Agency 2005): ranging from the largest, the Metropolitan Area of Belfast (which encompasses about 580,000 people, 34.3% of the population); to the smallest representing settlements of less than 1,000 people and open countryside. NILS includes the place of residence on Census day and this was used to categorise cohort members. The eight settlement bands were re-categorised into three