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SHORT REPORT

Describing transitions in residential status over 10 years in the very old: results from the Newcastle 85+ Study

Laurie E. Davies[1], Katie Brittain[1], Heather Wilkinson[2], Sue Lewis[2], Louise Robinson[1,†], Andrew Kingston[1,†]

[1]Population Health Sciences Institute, Newcastle University, Newcastle upon Tyne, NE4 5PL, UK
[2]Advanced Care Research Centre (ACRC), University of Edinburgh, Edinburgh, EH16 4UX, UK

Address correspondence to: Laurie E. Davies, Population Health Sciences Institute, Biomedical Research Building (Room 2.39, Second floor), Campus for Ageing and Vitality, Newcastle University, Newcastle upon Tyne, NE4 5PL, UK.
Tel: +44(0)1912085668; Fax: 01912081101. Email: laurie.davies@newcastle.ac.uk
[†]Joint senior author

Abstract

Background: the very old (aged ≥ 85) are the fastest growing subpopulation of many developed countries but little is known about how their place of residence changes over time. We investigated transitions in residential status in an inception cohort of 85-year-olds over 10 years.
Methods: data were drawn from the Newcastle 85+ Study, a population-based longitudinal study of individuals aged 85 in 2006 (i.e. born in 1921) and permanently registered with a Newcastle or North Tyneside general practice ($n = 849$).
Results: 76.3% lived in standard (non-supported) housing at baseline (age = 85) and few moved into a care home. The majority either remained in standard housing or died over the study period. A significant number who lived in standard housing had dependency and frailty at baseline.
Discussion: given the undersupply of care homes, and preference of older people to remain in their own homes as they age, the questions posed by this analysis are how to survive to 85 and remain in standard housing until the age of 85? And how, and by whom, are such a group being supported to remain at home? We need qualitative research to explore the informal-formal care networks of the very old.

Keywords: very old, housing, care homes, transitions, older people

Key Points

- We investigated transitions in residential status in an inception cohort of 85-year-olds over 10 years.
- Few moved into a care home.
- The majority either remained in standard (non-supported) housing or died over the study period.

Background

Most people would prefer to remain in their own homes as they age [1]. The home sustains self-identity, and offers connection to others, for example [1]. It can guard against the potential threat of being labelled 'old' by others, and the loss of autonomy that goes with it [2]. For some, 'ageing in place' can mean moving to a home in the same vicinity that is safer and more adapted to their needs [3], such as sheltered housing. Once the ability to carry out activities of daily living crosses a certain threshold (e.g. needing help to eat), a transition to long-term care can follow, but many older people with substantive care needs remain in the community with various means of assistance [4].

The very old (aged ≥ 85) are the fastest growing subpopulation of many developed countries [5], but little is known about how their residential status changes over time [6, 7].

This is despite the undersupply of care home places, and the expected decline in availability of family carers to support people living at home [8].

We examine transitions in residential status in the very old over 10 years with a rich dataset: the Newcastle 85+ Study.

Methods

Participants

The Newcastle 85+ Study is a population-based longitudinal study of people born in 1921, aged 85 in 2006, and registered with a participating general practice in Newcastle or North Tyneside [9]. When the study began (2006), participants were broadly representative of 85-year-olds in England and Wales by sex, care home residence and whether living alone, but those with end-stage terminal illness were excluded ($n = 11$; [10]). Of the potential baseline sample ($n = 1040$), 849 people (forming the basis for this analysis) agreed to multidimensional health assessment in their place of residence, inclusive of care homes, with review of general practice records; 188 to GP record review only, and three to multidimensional health assessment. By 2016, participants were 95-years-old and 90 of them remained for a fifth wave of data collection. Full details of study design, participant recruitment and representativeness are reported elsewhere [9–11]. Further details, including study questionnaires and the GP record review proforma are available on the Newcastle 85+ Study website https://research.ncl.ac.uk/85plus/, whilst Appendix 1 outlines study retention.

Ethical approval

The Newcastle and North Tyneside Local Research Committee One approved the Newcastle 85+ Study (Ref: 06/Q0905/2).

Residential status definition

Participants lived in standard (non-supported) housing (owner occupied, social housing or private rented), sheltered housing (a private independent unit with some shared facilities and an onsite warden) or a care home (nursing or residential).

Statistical analysis

Baseline sociodemographic and health characteristics of participants and differences by residence type were analysed using the chi-squared or Fisher exact test. We highlight transitions in residential status over 10-years through an Alluvial diagram. To model transitions over 10-years we fitted a multi-state model with four states: standard accommodation, sheltered accommodation, care home and death (Appendix 2). Age was used as the temporal metric to mitigate some of the effect of the Markov assumption i.e. that only the current state influences future progression. Survival time was calculated from the date of baseline interview to the date of death or censoring at 120 months (if a participant had taken part in the 10-year follow-up). Models were adjusted for sex and multimorbidity. Using the model parameters, we calculated the probability of living in the various residential statuses from age 86 to 95, conditional on residential status at 85. Analyses were performed using R V.4.0.2.

Results

Participant characteristics

At baseline (age = 85, $n = 849$), most participants lived in standard housing (76.3%, 648/849) (Appendix 3). Of whom, 58.6% (380/648) were women, 78.7% (509/647) were cognitively intact, 40.1% (259/646) had four or more diseases and 22.2% (129/581) were frail (Fried's phenotype). Approximately half were dependent (requiring care less than daily (39.2%, 244/622), regularly each day (10.5%, 65/622) or 24 hourly (2.1%, 13/622)).

Residential transitions

Few participants in standard housing at baseline moved into sheltered housing or a care home over the study period. Most remained in standard housing or died, depending on time of follow-up, with more deaths occurring as a function of time of follow-up (Figure 1).

Men and women in standard housing at 85 years of age had an 86.9 and 89.6% chance of remaining in standard housing by age 86, respectively, and a 24.8 and 33.6% chance of remaining in standard housing by age 95. For both sexes the chance of staying in standard accommodation decreased with age through an increased risk of mortality, not from transitions into sheltered housing or care homes. Men in standard housing had less chance of dying than men in sheltered accommodation through to age 95. This pattern was reversed but less pronounced for women up to age 94 (Figure 2).

Discussion

Principle findings

Most 85-year-olds lived in standard (non-supported) housing at baseline and either remained in standard housing or died over the study period.

Comparison with existing literature

Most older people want to remain in their own homes as they age [1] and there are many reasons for this. An aversion to residential care, strong feelings of attachment to place and the memories embodied there; to sustain self-identity, autonomy and social connections; for quality of life, familiarity with resources and affirmation of security [1, 12–14]. Our descriptive analyses (Appendix 3), and the wider literature [15], also suggest that older community-dwellers

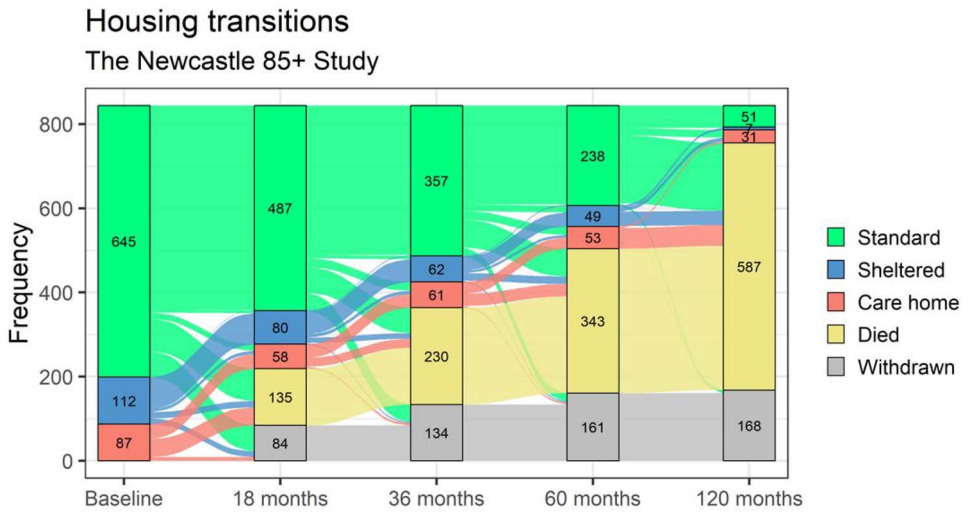

Figure 1. Housing transitions in the Newcastle 85+ Study[a]. [a]Numbers may vary due to missing values at follow up.

Figure 2. Conditional probability of residential status.

avoid care home admission through belonging to multimorbidity clusters without dementia. Within the United Kingdom there is an ongoing shift from high-cost, reactive, bed-based care, to care that is preventive, proactive and based closer to home [16]. In many countries ageing in place is the preferred strategy [17], and complex interventions based on comprehensive geriatric assessment can support independent living [18]. Another of many potential explanations for our findings is the contribution of formal but mainly informal carers [19], whose help is positively perceived by those aged 85 and over, so long as they can still make their own decisions concerning daily life at home [20]. We found a significant number in standard housing were dependent and frail at baseline for example, but individuals with low dependency

are unlikely to qualify for publicly funded care, and many older people feel the responsibility for care should be with the family rather than the State [4]. Informal care networks traditionally relied upon are however becoming more fragile for reasons including extended working life, greater female labour market participation and more geographically disparate families [4]; more too must be done to support unpaid carers following COVID-19 [21], and this backdrop informs our future work.

Strengths and limitations

Over long-term follow-up and with a large dataset we highlight a misconception: that very old people move into care homes. Most 85-year-olds from this study in the North East remained in the community, whilst often living with complex multimorbidity, frailty and dependency. This extends the limited evidence on residential transitions in older people [6, 22, 23] and directs future research with respect to how they are supported and by whom.

Our work has limitations, mainly, not knowing the residential history of the Newcastle 85+ Study participants before baseline, but thereafter few moved into care homes, which broadly aligns with how 'ageing in place' is defined. For those living in sheltered housing and care homes at baseline, we do not know what prompted the move, but relocation risk factors are examined elsewhere (for examples, see [15, 22, 24]). Extra care housing has also since developed in place of sheltered housing. Interval-censoring means we cannot exclude the possibility that those who died between 60 and 120 months follow-up moved into care homes during this time. We could not examine end-of-life transitions, but previous research shows acute hospitals are the place of death for most community-dwelling 85-year-olds [6]. Furthermore, remaining at home is not ideal for everyone [25], may not always be by choice [3] and is not without challenges [26]. For example we await social care reform, require more community-based geriatric teams supporting and mentoring generalists in primary care, and recognise that very old people living at home with frailty are in a precarious situation. Lastly, it was beyond the scope of this research to examine the resources very old people utilise over time to stay at home with often complex conditions, for example the neighbourhood, social networks and social care support. A future longitudinal analysis will examine the care provided to the very old in standard housing (who helps, how and how often, what is their age, health status and proximity?). Understanding these care networks might inform future support needs for this age group—and how else to support unpaid carers—, as we look ahead to rising dependency, multimorbidity and frailty with population ageing [4, 27, 28], reduced caregiver availability [19] and how to recover from the COVID-19 pandemic [21].

Implications

All countries in Europe are facing insufficient availability of residential care for older people [29]. Given the undersupply of care homes, and preference of older people to remain in their own homes as they age, the questions posed by this analysis are to: (i) better understand the (biopsychosocial/environmental) factors, which enable people to survive to 85 and remain living in their own home, (ii) explore in-depth the care and social networks that support 85-year-olds to remain at home and (iii) determine at an early, proactive phase those older people who are at higher risk of moving into a care home and how and when to intervene to better support them to stay at home.

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Supplementary Data: Supplementary data mentioned in the text are available to subscribers in *Age and Ageing* online.

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