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# Living arrangements, relationship to people in the household and admission to care homes for older people

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## Abstract

**Objective:** to assess the separate contributions of marital status, living arrangements and the presence of children to subsequent admission to a care home.
**Design and methods:** a longitudinal study derived from the health card registration system and linked to the 2001 Census, comprising 28% of the Northern Ireland population was analysed using Cox regression to assess the likelihood of admission for 51,619 older people in the 6 years following the census. Cohort members' age, sex, marital and health status and relationship to other household members were analysed.
**Results:** there were 2,138 care home admissions; a rate of 7.4 admissions per thousand person years. Those living alone had the highest likelihood of admission [hazard ratio (HR) compared with living with partner 1.66 (95% CI 1.48, 1.87)] but there was little difference between the never-married and the previously married. Living with children offered similar protection as living with a partner (HR 0.97; 95% CI 0.81, 1.16). The presence of children reduced admissions especially for married couples (HR 0.67 95% CI 0.54, 0.83; models adjusting for age, gender and health). Women were more likely to be admitted, though there were no gender differences for people living alone or those co-habiting with siblings.
**Implications:** presence of potential caregivers within the home, rather than those living elsewhere, is a major factor determining admission to care home. Further research should concentrate on the health and needs of these co-residents.

**Keywords:** *care homes for older people, living arrangements, admission risk, elderly*

## Introduction

Permanent admission to a care home is an expensive means of providing care for older people and most would prefer to remain in their own homes. Although statutory community care services can substitute for care home provision, the informal and unpaid support network provided by friends and relatives is probably a more important component of care in the community [1]. One simple indicator of social support is a person's living arrangements, as the household composition may play an important part in ensuring their day-to-day wellbeing by offering practical, social and economic support in the home.

There are several systematic reviews of the influence of factors such as living arrangements on care home admission. One such review found 'unequivocal evidence' of a higher admission risk for people living alone [2]; another doubling in the odds for people living alone [3], while a third found no association [4]. The first two studies focussed on US cohorts. The third included studies from any developed country, but only population cohorts. While living alone seems an intuitive indicator of isolation and poor health outcomes, the evidence is not conclusive. This paper aims to provide further evidence regarding the effect of living arrangements on care home admission using a large population-based cohort study.

While the review of population studies found inconclusive evidence for the effect of living alone, inspection of individual studies (including those not included in previous reviews) shows some evidence of variation by household composition. Some studies found lower admissions if living with unmarried compared with married children [5]. Others found

increased admissions if living with any other family [6], or any other people [7] compared with living with a spouse. Household size shows some association, in that one person households have the highest admission rates, though there is unclear evidence as to whether increasing size further reduces risk [8, 9]. This study uses novel classifications of household structure to assess the importance of living arrangement as a risk factor for admission (please note that this paper refers to the statistical concept of 'risk' throughout the report rather than risk of a negative outcome; as admission to a care home is not an indication of failure).

There is inconclusive evidence surrounding gender as a factor influencing admission rates [2, 10]; however, it is plausible that gender modifies the effect of marital status or living arrangements on admission risk, as an older person's gender largely predetermines characteristics of their spouse (e.g. women tend to marry older men).

In the Northern Ireland health and social care system, access to care for older people is determined primarily by needs assessment, and co-payments for the cost of care are determined by individuals' means to pay. All nursing and residential homes are required by law to register with a single inspectorate, and this study is based on admissions to these facilities only rather than other care facilities.

## Methods

### The cohort

The Northern Ireland Longitudinal Study (NILS) is an approximate 28% sample of the population derived from the Northern Ireland health card registration system which links to the census. The use of the NILS for research was approved by the Office for Research Ethics Committees Northern Ireland (ORECNI). Use of the health card registration database enables change of address information and subsequent mortality events to be linked for cohort members. A cohort was defined of 51,619 people aged 65 or over at the time of the census not living in a care home. All characteristics were taken from census returns; age, sex, marital status and two measures of self-reported morbidity; a limiting long-term illness (LLTI) question: 'do you have a long-term illness, health problem or disability which limits your daily activities or the work you can do? Yes/No' and another on general health (GH): 'over the last twelve months would you say your health has on the whole been: good, fairly good or not good'. Self-reported health is an independent risk factor for future mortality and use of health services [11].

Although NILS only links events over time for cohort members, the characteristics of other household members can be included as contextual information. Census data were used to group households according to whether or not the cohort member was living alone; relationship to co-residents if not alone and marital status (co-habiting was treated as married). This produced 10 groups for the analysis (see Table 1). The 'partner and others' category referred to people living with a spouse and any combination of non-relative, sibling or other relative, or children plus others (i.e. not in the partner and children category). The 'other/complex' category comprised cohort members living with any other combination of child, sibling, other relatives and non-relatives not falling under another category. About half of the 'others' in the 'partner and others' and 'other/complex' category were non-relatives.

Table 1. Distribution of personal characteristics and living arrangements/marital status at the time of the Census, and numbers (%) admitted to care homes in the subsequent 6 years

| Living arrangement | Male | | Female | |
|---|---|---|---|---|
| | Total (% of variable) | Admitted no. (%) | Total (% of variable) | Admitted no. (%) |
| Total | 21,548 | 575 (2.7) | 30,071 | 1,563 (5.2) |
| Age | | | | |
| 65–74 | 13,461 (62) | 160 (1.2) | 16,298 (54) | 280 (1.7) |
| 75–84 | 6,927 (32) | 313 (4.5) | 10,762 (36) | 827 (7.7) |
| 85+ | 1,160 (5) | 102 (8.8) | 3,011 (10) | 456 (15.1) |
| General health | | | | |
| Good | 7.758 (36) | 110 (1.4) | 8,976 (30) | 238 (2.6) |
| Fairly good | 8,482 (39) | 217 (2.6) | 12,579 (42) | 704 (5.6) |
| Not good | 5,308 (25) | 248 (4.7) | 8,516 (28) | 621 (7.3) |
| Limiting long-term illness | | | | |
| No | 10,080 (47) | 157 (1.6) | 12,753 (42) | 375 (2.9) |
| Yes | 11,468 (53) | 418 (3.6) | 17,318 (58) | 1,188 (6.9) |
| Living arrangement/marital status | | | | |
| Lives alone | | | | |
| Never married | 1,411 (7) | 81 (5.7) | 2,129 (7.1) | 176 (8.3) |
| Married and widowed | 2,273 (11) | 114 (5.0) | 9,595 (32) | 759 (7.9) |
| Separated/divorced | 714 (3) | 23 (4.6) | 670 (2) | 18 (2.7) |
| Married | [a] | [a] | 215 (1) | 22 (10.2) |
| Lives with | | | | |
| Partner | 10,854 (50) | 218 (2.0) | 8,708 (29) | 225 (2.6) |
| Partner and children | 3,618 (17) | 38 (1.1) | 2,646 (9) | 46 (1.8) |
| Partner and others | 470 (2) | 12 (2.6) | — | — |
| Siblings | 664 (3) | 33 (5.0) | 1,125 (4) | 75 (6.7) |
| Children | 898 (4) | 25 (2.8) | 3,484 (12) | 146 (4.2) |
| Others/complex | 646 (3) | 23 (3.6) | 1,499 (5) | 96 (6.4) |

[a]"Separated/Divorced' and 'Married'; and 'Siblings' and 'partner and others' categories aggregated for presentation due to low-cell counts, regression models based on disaggregated data.

### Identification of care homes

Information from the regional care home inspectorate, which has a statutory responsibility to collect and publish information on care homes, was used in preference to census data which is known to misclassify some smaller homes [12]. This register automatically excludes other non-institutional care facilities such as sheltered accommodation

or special housing schemes. Information on 399 registered care homes for older people operating during the study period was linked to the 2001 census by the NILS data custodians. These data were used to exclude people in care homes at the time of the census and to identify those who were admitted over the course of the follow-up period.

### Statistical analysis

The relationship between resident and household characteristics and risk of admission during the 6 years of follow-up was investigated using Cox regressions. Proportional hazards assumptions were graphically checked for each variable. Interaction terms between sex and living arrangement were used to assess different effects of living arrangement on admission risk for men compared with women.

Two sets of sensitivity analyses were undertaken: the first examined the association of study variables with admission in single-year intervals to examine the effects of possible change in baseline characteristics during follow-up; the second examined admission to nursing homes only to see if the significance of household composition varied according to the type of care home.

## Results

There were 51,619 individuals in the NILS cohort aged 65 and over and not living in a care home for older people at the time of the 2001 Census. Table 1 shows the distribution of the cohort characteristics at baseline and proportions admitted over the following 6 years. A third (17,947) of people lived alone. People living alone were predominantly female (74%) compared with those living with others (50%), and were on average 3.2 years older (mean age 76.2 (SD 6.9) compared with 73.0 (SD 6.1)). Less of those living alone reported 'Good' GH (28% compared with 35%), and a greater proportion reported having a LLTI (60% compared with 54%). Almost half of the cohort lived in two person households, the majority of whom were living with their partner (see Table 1). Of those people without a partner 6,730 were living with their children, 1,955 with siblings and 2,260 were living with other family members or in non-family households.

The health status and living arrangements of cohort members at baseline were related. Logistic regression analysis (models not shown) found that people living alone and widowed were more likely to report a LLTI than those living with a partner (OR 1.30; 95% CI 1.24,1.37), while those who were separated or divorced had a higher prevalence still (OR 1.65; 95% CI 1.47,1.84). Those living with children had a greater likelihood of reporting a LLTI, whether also living with a partner (OR 1.16; 95% CI 1.09, 1.23) or with children only (OR 1.76; 95% CI 1.64, 1.89). Cohort members living with a sibling had the best health (OR 0.89; 95% CI 0.81, 0.97). Similar differences in health status were found using GH (dichotomised into not good versus fairly good/good) rather than LLTI.

Table 2. Relative hazards of admission to a care home by living arrangements, adjusting for age and health variables, stratified by sex

| Living arrangement males | Age | Age, general health and LLTI |
|---|---|---|
| Live alone | | |
| Never married | 2.70 (2.09, 3.48) | 2.57 (1.99, 3.32) |
| Widowed | 1.55 (1.22, 1.95) | 1.44 (1.14, 1.82) |
| Separated/divorced | 2.87 (1.86, 4.41) | 2.39 (1.55, 3.68) |
| Married | 1.83 (0.90, 3.72) | 1.94 (0.96, 3.93) |
| Lives with | | |
| Partner | Reference | Reference |
| Partner and children | 0.63 (0.45, 0.89) | 0.61 (0.43, 0.85) |
| Partner and others | 1.42 (0.80, 2.55) | 1.38 (0.77, 2.47) |
| Siblings | 2.41 (1.67, 3.47) | 2.39 (1.66, 3.45) |
| Children | 1.14 (0.75, 1.73) | 1.05 (0.69, 1.58) |
| Others/complex | 1.35 (0.88, 2.08) | 1.19 (0.78, 1.84) |
| Females | Age | Age, general health and LLTI |
| Live alone | | |
| Never married | 1.79 (1.46, 2.19) | 1.86 (1.52, 2.27) |
| Widowed | 1.50 (1.29, 1.76) | 1.47 (1.26, 1.72) |
| Separated/divorced | 1.31 (0.81, 2.12) | 1.18 (0.73, 1.90) |
| Married | 1.81 (1.17, 2.81) | 1.74 (1.12, 2.70) |
| Lives with | | |
| Partner | Reference | Reference |
| Partner and children | 0.85 (0.61, 1.19) | 0.82 (0.59, 1.14) |
| Partner and others | 0.49 (0.18, 1.31) | 0.47 (0.18, 1.27) |
| Siblings | 1.46 (1.12, 1.90) | 1.52 (1.17, 1.98) |
| Children | 0.97 (0.79, 1.20) | 0.90 (0.73, 1.11) |
| Others/complex | 1.19 (0.93, 1.52) | 1.11 (0.87, 1.42) |

Over the 6 years of follow-up, 2,138 (4%) of the cohort were admitted to a care home, a rate of 7.4 admissions per thousand person years at risk. Risk of admission increased with age, female sex and poor health status. Cohort members living alone had a greater likelihood of admission than those living with a partner, even after adjustment for age, sex and health status. Admission rate for the widowed, separated and divorced was similar to the never married with the exception of widowed men who were less likely than never married men to be admitted (Table 2). The results from unstratified models showed that living with a partner was better than with siblings (hazard ratio (HR) for admission 1.78; 95% CI 1.44, 2.21) or living in other complex household arrangements (HR 1.17; 95% CI 0.95, 1.44). People living with their partner and others showed a similar likelihood as people living with their partner only (HR 0.93; 95% CI 0.57, 1.54). Living with children reduced admission risk. Among people living with a partner, those with children were 30% less likely to be admitted to a care home (fully adjusted HR 0.70 95% CI 0.55, 0.89; models not shown); and although people without partners but living with children had poorer health than those living with partners, there was no difference between the two groups in the risk of admission (fully adjusted HR 0.96; 95% CI 0.80, 1.15). The effect of living arrangements on admission was modified by sex (Chi-square for

interaction=44.48, 10 d.f.; $P < 0.01$) and the results stratified by sex are presented in Table 2. The differences in admission between living alone and with other people tended to be greater for men than for women. Men who were separated/divorced were 2.5 times as likely to be admitted to a care home as those who were living with a partner; for females there was little evidence of raised likelihood (HR 1.18; 95% CI 0.73, 1.90).

Models looking at risk of admission to a nursing home only produced essentially the same associations with living arrangements as those found for admission to any type of home (nursing or residential care home) as presented above. Nursing home residents would be expected to be in poorer health; however, the self-reported health measures here do not appear to differentiate between the two types of care. There was some attenuation in the magnitude of risk estimates at time points further from the Census (e.g. HR for LLTI baseline to year 1 4.00 95% CI 2.99, 5.35), HR year 4 to year 5 2.84 95% CI 2.26, 3.52), however altering time from baseline assessment of characteristics did not lead to changes that would affect the interpretation of the presented findings.

## Discussion

This study builds upon previous research on risk of admission to a care home for older people, and using novel combinations of marital status and living arrangements has clarified some of their relative contribution.

Living alone increased admission risk compared with living with a partner, and some of this is due to differences in health. A Finnish study found that former marital status continued to make a difference, with the alone and never married having a higher admission risk than those living alone but previously married [7]. Other studies [13, 14] showed that informal care from neighbours, family and friends in the community can reduce admission. These results suggest the principal factor reducing admission risk is support coming from co-residents within the household. Alternatively, it may be that people with the least family support outside the household (the never married) receive more domiciliary care to ameliorate the risk conferred by social isolation than people with more family support (widowed, divorced and married). No measures relating to support outside the household were available in this study; hence both interpretations are tentative.

Not all co-habitation is equally beneficial. As with other studies, we found that marriage is associated with a reduced risk of admission [5, 9, 15, 16]; but living with a sibling does not confer the same protection as living with a partner. Given that siblings and spouses are of similar age and will have shared the same physical and social environments as the cohort member for much of their lives, this suggests being married itself, rather than presence of others is of importance. Siblings should be able to provide the instrumental support, such as help with daily activities thought to explain lower admission rates of people living with spouses [17, 18], yet men and women living with siblings are about 75 and 40% more likely than those living with partners to be admitted. The lower levels of LLTI at baseline for people living with a sibling may be a reflection of the relative failure of siblings to care for sicker kinfolk. It appears that marriage brings a level of commitment and willingness to undertake a greater level of care provision not shared by other family or household members, with the exception of children (see below). Partners may be more comfortable providing personal care than siblings. The effects of the additional financial benefits associated with marriage [18] could not be assessed or adjusted for in the current study.

Children are the second most common informal carer group after spouses and the finding in the current study that people living with children have worse health at baseline than their peers who are living independently is in keeping with research that suggests older people move to live with children to receive informal care [19]. The presence of children reduced the risk of admission for married couples (compared with couples without children), which is remarkable as the former had worse health at baseline. Single people living with children also had lower admission rates than previously married people living alone, but similar risk to those living with partners. The benefits of living with children may be due to the extra sense of duty arising from family bonds, because they are younger and more capable of undertaking a demanding support role, or family members may increase their caregiving commitment rather than see their potential inheritance spent on nursing home fees [20]. Grundy has shown that living with never-married children reduced the risk of admission, but with married children the risks were similar to those living alone [15], perhaps because of competing responsibilities. Some researchers suggest that the presence of daughters is more important than sons for reducing the risk of admission [13, 21].

This was a large representative census-based study and the linkage of data from the regional inspectorate has circumvented the caveats associated with other census-based studies. There are, however, some limitations that should be mentioned. The first was the inability to identify changes in living arrangements or health status during follow-up. Others have made comparisons across successive censuses [15, 22], this will not be possible in Northern Ireland until after the next census. However, models looking at likelihood of admission over shorter time frames showed similar results, lending credence to the validity of the reported associations.

The census-based measures of health status are unlikely to have fully accounted for health problems that lead to the requirement for care home admission; around half of this cohort reported having a LLTI, whereas the actual prevalence of physical disability is much lower in the general population. These health measures will not closely

approximate the risk conferred by dependence in activities of daily living as could be assessed using more sensitive health measures. Furthermore, these measures could not capture the sudden onset or worsening of condition during follow-up. The lack of information on psychological health is a major drawback, as dementia and cognitive ability are major factors influencing admission [23, 24].

As with most other research in this area, we did not differentiate between cohabiting and married couples, which may be an increasingly important consideration for future cohorts of older people. To our knowledge only one study, in Finland, has been able to do this, showing that cohabiting is as protective as marriage for men though not for women [7].

Finally, the culture and composition of Northern Ireland's society may mean that the findings reported here may not be directly transferred to other populations. However, we believe that while there are likely to be differences in the population distribution according to marital status and living arrangements [25] and the amount of intergenerational contact [26], the relative importance of admission risk according to marital status and living arrangement reported here are likely to relevant elsewhere.

## Key points

- The importance of living arrangements for care home admission risk remains unclear.
- A population-based cohort study was used to investigate the importance of living arrangements for care home admission risk.
- Living with children or a spouse appeared more protective than living with others.
- Presence of people in the household, rather than outside the home seems to be the main factor affecting admission risk.

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## Conflicts of interest

None declared.

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## References

1. Berkman LF. Social support, social networks, social cohesion and health. Soc Work Health Care 2000; 31: 3–14.
2. Miller EA, Weissert WG. Predicting elderly people's risk for nursing home placement, hospitalization, functional impairment, and mortality: a synthesis. Med Care Res Rev 2000; 57: 259.
3. Gaugler JE, Duval S, Anderson KA, Kane RL. Predicting nursing home admission in the US: a meta-analysis. BMC Geriatr 2007; 7: 13.
4. Luppa M, Luck T, Weyerer S *et al*. Prediction of institutionalization in the elderly. A systematic review. Age Ageing 2010; 39: 31–8.
5. Grundy E. Trends in, and transitions to, institutional residence among older people in England and Wales, 1971–91. J Epidemiol Community Health 1997; 51: 531.
6. Soto ME, Andrieu S, Gillette-Guyonnet S *et al*. Risk factors for functional decline and institutionalisation among community-dwelling older adults with mild to severe Alzheimer's disease: one year of follow-up. Age Ageing 2006; 35: 308–10.
7. Nihtila E, Martikainen P. Household income and other socioeconomic determinants of long-term institutional care among older adults in Finland. Popul Stud (Camb) 2007; 61: 299–314.
8. Connolly S, O'Reilly D. Variation in care home admission across areas of Northern Ireland. Age Ageing 2009; 38: 461–5.
9. Tomiak M, Berthelot JM, Guimond E, Mustard CA. Factors associated with nursing-home entry for elders in Manitoba, Canada. J Gerontol A Biol Med Sci 2000; 55: 279–87.
10. Luppa M, Luck T, Weyerer S *et al*. Prediction of institutionalization in the elderly. A systematic review. Age Ageing 2010; 39: 31–8.
11. Idler EL, Benyamini Y. Self-rated health and mortality: a review of twenty-seven community studies. J Health Soc Behav 1997; 38: 21–37.
12. Banks L, Haynes P, Balloch S, Hill M. Changes in Communal Provision for Adult Social Care 1991–2001, vol. 1. Joseph Rowntree Foundation: Brighton, 2006; 1–98.
13. Charles KK, Sevak P. Can family caregiving substitute for nursing home care? J Health Econ 2005; 24: 1174–90.
14. Sarma S, Simpson W. A panel multinomial logit analysis of elderly living arrangements: evidence from aging in Manitoba longitudinal data, Canada. Soc Sci Med 2007; 65: 2539–52.
15. Grundy E, Jitlal M. Socio-demographic variations in moves to institutional care 1991–2001: a record linkage study from England and Wales. Age Ageing 2007; 36: 424–30.
16. St John PD, Montgomery PR, Kristjansson B, McDowell I. Cognitive scores, even within the normal range, predict death and institutionalization. Age Ageing 2002; 31: 373–8.

17. Nihtilä E, Martikainen P. Institutionalization of older adults after the death of a spouse. Am J Pub Health 2008; 98: 1228.
18. Nihtila E, Martikainen P. Why older people living with a spouse are less likely to be institutionalized: the role of socio-economic factors and health characteristics. Scand J Public Health 2008; 36: 35–43.
19. Spitze G, Logan JR, Robinson J. Family structure and changes in living arrangements among elderly nonmarried parents. J Gerontol 1992; 47: S289–96.
20. Glaser K. Transitions to supported environments in England and Wales among elderly widowed and divorced women: the changing balance between co-residence with family and institutional care. J Women Aging 2003; 15: 107.
21. Freedman VA. Family structure and the risk of nursing home admission. J Gerontol B Psychol Sci Soc Sci 1996; 51: 61–9.
22. Breeze E, Sloggett A, Fletcher A. Socioeconomic and demographic predictors of mortality and institutional residence among middle aged and older people: results from the Longitudinal Study. J Epidemiol Community Health 1999; 53: 765–74.
23. Seematter-Bagnoud L. Healthcare utilization of elderly persons hospitalized after a noninjurious fall in a Swiss Academic Medical Center. J Am Geriatr Soc 2006; 54: 891–7. doi: 10.1111/j. 1532–5415.2006. 00743. x.
24. Joray S, Wietlisbach V, Bula CJ. Cognitive impairment in elderly medical inpatients: detection and associated six-month outcomes. Am J Geriatr Psychiatry 2004; 12: 639–47.
25. Peek MK, Coward RT, Peek CW. Race, aging, and care: can differences in family and household structure account for race variations in informal care? Res Aging 2000; 22: 117–42.
26. Tomassini C, Kalogirou S, Grundy E *et al*. Contacts between elderly parents and their children in four European countries: current patterns and future prospects. Eur J Ageing 2004; 1: 54–63.

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# Standing on textured surfaces: effects on standing balance in healthy older adults

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## Abstract

**Background:** standing on textured surfaces or wearing textured shoe insoles can alter balance performance. This evidence, although inconclusive, offers a potential intervention for improving balance in older adults. This study explored the effect of standing on textured surfaces on double-limb balance in older adults and changes in muscle activity as a possible mechanism of effect.
**Methods:** 50 healthy older adults (29 female, age mean [1SD] 75.1 [5.0]) stood quietly in six conditions—eyes open and closed on two different textured surfaces and a smooth surface control. Mediolateral sway, anterior-posterior sway and centre of pressure velocity were extracted from a force platform and lower limb muscle activity collected using surface electromyography (EMG) over 30 s.
**Results:** for mediolateral range with eyes closed, there was a statistically significant effect of texture ($F$ [2, 47] = 3.840, $P$ = 0.033). This was attributed to a 9.2% decrease with Texture 1 compared with Control. No such effects were seen in any other balance variable or lower limb EMG activity for either visual condition.
**Conclusion:** the results suggest an effect of standing on textured surfaces on mediolateral sway in older adults, supporting further work to develop the therapeutic benefits of textured surfaces as an intervention to improve balance.

**Keywords:** *textured surfaces, balance, muscle activity, older adults*