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Research Paper

Disability levels and correlates among older mobile home dwellers, an NHATS analysis

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Abstract

Background: Although remarkably understudied, manufactured or mobile homes are the housing choice for nearly 20 million Americans and little is known about the health of older persons living in mobile homes.

Objective: We sought to investigate disability levels and other health correlates among older adults living in mobile or manufactured homes compared to their counterparts living in other types of homes.

Methods: We sampled non-institutional adults aged 65 years or older (n = 7609), of whom 344 lived in mobile homes, from the 2011 National Health and Aging Trends Study (NHATS).

Results: Respondents living in mobile homes (average age = 75.1 years; SD = 0.5) had lower education and income and medical insurance than older adults living in other types of community residence (average age = 77.5 years; SD = 0.2). They were more likely to smoke, have lung and heart disease, and report fair or poor general health status. Mobile home dwellers reported more difficulty or inability in performing the following activities of daily living when compared to their counterparts: stooping and kneeling (64.9% vs 60.8%, p = 0.007), walking 6 blocks (46.5% vs 41.5%, p = 0.001), walking 3 blocks (37.7% vs 33.5%, p = 0.002), and climbing up to 20 stairs (39.2% vs 34.8%, p = 0.02). Among those reporting disability, mobile home dwellers had fewer bathroom safety modifications.

Conclusion: There is higher prevalence of chronic conditions, functional and cognitive impairment in older mobile home dwellers compared to older adults living in other types of housing. Published by Elsevier Inc.

Keywords: Aging; Mobile home; Manufactured; Housing; Disability

In 2050, in the United States, there is projected to be an estimated 120 percent increase in the numbers of older adults. This means one in five will be sixty five years or older.[1] As people age, their levels of both physical and cognitive functioning begin to decline. According to the National Institutes of Health (NIH), there was some evidence of a decline in disability rates among the oldest old (age 85 and above) beginning in 1999, but this decline ended or was reversed in the newest cohorts recently entering this age epoch.[2]

Although remarkably understudied,[3] manufactured or mobile homes are the housing choice for nearly 20 million Americans and constitute 10–20% of all new housing production.[4] In some years, more than 30% of the new homes sold have been mobile or manufactured homes.[5] Among older adults, housing choices are primarily driven by costs, in addition to personal tastes. Physical disabilities and related issues may also drive housing choices, but there is little research on the selection process.

Most older Americans live in housing deemed adequate but the literature does not offer much information about the adequacy of living in mobile homes at older age. There are a large number of anecdotal reports raising issues such as the small and overcrowded living space,[6,7] increased vulnerability to natural disasters,[8–10] under-regulation and uncertain policies regarding the ownership/rental and laws of modifying mobile homes.[11–14] The concentration of this type of housing in rural or suburban areas also may be associated with decreased access to health care and related services.[15,16] According to the American Housing Survey

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(AHS), almost all of residences designated as inadequate among persons 65 years and older were single-family detached units, most of which were mobile homes.[17] Inadequate housing can contribute to various infectious and chronic diseases and injuries that can exacerbate older adults' health.[18]

The purpose of this paper is to investigate disability levels and other health correlates among older adults living in mobile or manufactured homes, such as chronic conditions, functioning, and the prevalence of environmental modifications, and to contrast these residents with persons living in other types of community dwellings. Data from the 2011 National Health and Aging Trends Study (NHATS) were analyzed to highlight policy implications and future research recommendations.

Methods

Data source

The NHATS is a nationally representative cohort study designed to investigate multiple aspects of functioning and disability in later life. Supported by the National Institute on Aging of the US National Institutes of Health, in-person interviews are used to collect detailed information from Medicare beneficiaries ages 65 years and older living in the contiguous United States.[19] Medicare is available to 97% of all older adults in the United States. In 2011, a stratified, multistage sampling design was used to enroll 8245 participants into the study. The baseline response rate was 71% (8245/11,637).[20] The Johns Hopkins University Institutional Review Board approved the study protocol. Trained survey research staff interviewed study participants in their homes. This analysis was limited to community-dwelling residents; 468 (5.7%) nursing home residents were excluded. The final analytic sample size was 7,609, of whom 344 respondents were mobile home dwellers. Additional information on NHATS is available at: (http://www.nhats.org/).

Definitions and variable creation

The baseline interview, from which the data in this report are drawn, included questions about types of housing classified into mobile home/trailer or any other types of residence (free standing detached house, single house but attached to others, multi-unit building, and other) yielding a study sample of 344 mobile home dwellers, and 7265 other community dwellers.

Demographic variables included date of birth, gender, race/ethnicity, and educational attainment. Economic status was represented by annual household income, car/vehicle ownership and residence ownership. Individuals were asked about their employment status and whether health limits their ability to work. They were designated as living alone if no other person resided in the household and if the interviewee reported that he or she was married but not residing together with the spouse. Body mass index (BMI) was calculated with the formula weight in kilograms divided by the square of height in meters. Respondents were asked if they have seen a doctor, or have been hospitalized in the past year. Medical insurance coverage questions included Medicaid, Medicare part D, "Medigap" insurance policies, and non-governmental long term care insurance. Health problems surveyed included history of falls in the past year or pain that limited daily activities. A number of chronic conditions were queried, including hypertension, diabetes, cancer, lung disease, heart disease, stroke, arthritis, and dementia/Alzheimer's disease. Self-rated health status was classified as excellent or very good, good, or fair or poor.

The NHATS disability framework[21] was used to assess disability using a mix of self-report and performance-based capacity measures that have been validated.[22,23] The NHATS disability framework[21,24] is a blend of Nagi's widely used model and the more recent language and perspective of the World Health Organization's International Classification of Functioning, Health, and Disability. Functional status was assessed using six basic self-report measures that assess physical capacity of the upper and lower extremities which were used in prior studies including the Women's Health and Aging Study (WHAS) and the Health and Retirement Survey—walking 3 blocks, getting in and out of chair, dressing, getting in and out of bed, bathing and toileting)—and four basic Instrumental Activities of Daily Living (IADLs)—using the telephone, shopping for groceries, making hot meals, and managing money. Physical capacity was assessed for the upper extremities by asking if there was difficulty or inability to reach overhead or put a heavy book on a shelf, open a sealed jar, or using fingers to grasp small objects. Similar assessments for lower extremity function included difficulty or inability to walk 6 blocks, climb 20 stairs, lift or carry 20 lbs and bend down or get down on one's knees and get back up. The use of mobility devices such as a cane, walker, wheelchair, or scooter were sought.

A disability score was created by counting the number of activities that a respondent had difficulty in performing: the six self-report measures assessing functional capacity and the IADLs. If they reported having difficulty or inability to do 1–3 of these activities, then the disability score was defined as *moderate*, and if they reported difficulty or inability to do more than 4 activities, then the disability score was defined as *severe*. For this analysis, those who had a moderate or severe disability score were identified as *disabled*.

Sensory impairment was assessed through asking if there was difficulty hearing despite using a hearing aid, seeing despite using glasses/contacts/vision aids. The ability to speak and swallow or chew food were also queried.

Cognitive assessment included self-rated memory (excellent, very good, good, fair/poor), whether there were any changes in thinking or memory that interfere with daily