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Brief Report

Homebound status among middle-aged and older adults with disabilities in ADLs and its associations with clinical, functional, and environmental factors

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Abstract

Background: Homebound status is associated with poor health, comorbidity, and mortality and represents a major challenge for health systems. However, its prevalence among people with disabilities in the basic activities of daily living (ADLs) is unknown.

Objectives: The objectives were to: (1) examine the prevalence of the homebound status among middle-aged and older adults with disabilities in ADLs, and (2) identify its clinical, functional, and environmental determinants.

Methods: This study included 221 community-dwelling subjects, aged ⩾50 years, who applied for long-term care services at the Office for Legal Certification of Long-term Care Need of Coruña (Spain). Each subject had a disability in ADLs and was interviewed by a trained examiner in the subject's home. The participants were considered homebound if they remained inside their home during the previous week.

Measures: Demographic, clinical, functional, and environmental factors. Multiple logistic regression was used to determine the factors associated with homebound status.

Results: The prevalence of homebound status was 39.8%. A multivariate analysis revealed that the presence of architectural barriers at the home entrance (stairs [OR: 6.67, $p < 0.001$] or a heavy door [OR: 2.83, $p = 0.023$]), walking ability limitations (OR: 3.26, $p = 0.006$), and higher age (OR: 1.05, $p = 0.04$) were associated with homebound status.

Conclusions: Homebound status is a highly prevalent problem among middle-aged and older adults with disabilities in ADLs. Architectural factors in the home and walking ability limitations seem to be important predictors, suggesting that health care interventions should target home adaptations and mobility skills as a means to preventing or decreasing homebound status.

Keywords: Accessibility; Functional disability; Homebound status; Mobility; Prevalence

The aging of the population and the steady growth in the number of people with disabilities expected for the 21st century pose major challenges for health policies. Clinical experience suggests that home confinement is a common problem in the everyday life of people with major disabilities, particularly in people with limited basic ADLs. Homebound status has been associated with loneliness,[1] depression,[1–5] comorbidity,[1,6] hospitalization,[4,7] and worse self-reported health status[1,8]; moreover, it is a risk factor for mortality.[3,7,8]

Previous research has estimated the prevalence of homebound status in the older population,[1,4,8–11] using diverse definitions.[6] Several studies have defined being homebound as going out of the house once a week or less, with a prevalence ranging between 7.5% and 19%[1,4,9,11]; the prevalence was below 5% when this frequency was less than once a week.[8,12] In a community sample of older people, 3.5% of the participants remained inside the home in the last month.[10] The rate of homebound people was higher in the frail older population (23.2%).[5] Regarding the factors

The first author had full access to all data in the study and takes responsibility for the integrity of data and the accuracy of the data analysis. Institutional Review Board approval from the regional ethics committee (Ethics Committee for Clinical Research of Galicia) was received: approval number 2010/253.

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associated with homebound status, most studies have focused on personal characteristics and clinical variables. Being homebound was associated with older age,[1,4,9,13] female gender,[1,3,8,9,13] and being widowed.[4,8] Other studies have reported more chronic health conditions[4,6] and cognitive[1,6] or sensory[1] impairments in the homebound group. However, relatively little is known regarding the role of environmental factors. With respect to the architectural environment, the homebound participants were more likely to have stairs at the home entrance in a sample of people aged ⩾75 years[1]; another study in urban older people showed that being homebound was associated with living on a higher floor.[10]

Despite the large number of studies on the prevalence and determinants of the homebound status in older people, no data exist on this topic among middle-aged and older adults with disabilities that prevent them from performing ADLs. Providing epidemiological information on homebound people could guide prevention and management health strategies. Accordingly, this study aimed to examine the prevalence of the homebound status and to identify its clinical, functional, and environmental determinants among middle-aged and older adults with disabilities in ADLs.

Methods

Setting

The study was carried out by a trained examiner from the Office for Legal Certification of Long-term Care Need of Coruña (Spain) in the applicant's home. This certification is required for access to the services of the Spanish long-term care system and consists of a standardized evaluation, known as the *assessment of the dependence status*. The study area consisted of a city (Coruña) and six bordering suburban and rural municipalities in northwestern Spain, with a total population of 330,877 individuals in 2015 (40.8%, aged ⩾50 years).

Participants and data collection

For the participants, the inclusion criteria were as follows: (i) application for a certification of long-term care need at the office described above, (ii) aged ⩾50 years, (iii) living in their homes, and (iv) a disability in ADLs, which is defined as the need for personal help to perform one or more of the following activities of the Katz Index: feeding, bathing, dressing, toileting, and transferring.[14]

The *assessment of the dependence status* is an official evaluation procedure composed of three steps: (i) a review of the participant's medical records, which were completed by a primary care physician and included diagnosed health conditions and impairments, (ii) a face-to-face interview with the applicants and their caregivers, and (iii) the use of a screening instrument. Uniform criteria are applied nationwide. The collected information was detailed in a standardized record, and these records were the source of data for this study.

The data used were supplied by the regional public administration and were fully anonymized. The data set was composed of all of the *assessments of the dependence status* performed consecutively in the study area by a trained examiner (health professional) over a 16-week period in 2012 ($n = 323$); these evaluations were conducted in the spring and summer. Using a retrospective chart review, the records of these assessments were physically retrieved and comprehensively reviewed. Out of all of these assessments, 102 assessments were then excluded because the participants were <50 years ($n = 19$), were institutionalized ($n = 62$), or did not have a disability in ADLs ($n = 21$). The resultant sample was 221 participants. Using a detailed form, the data extracted included measures on the homebound status and the independent variables classified into the following dimensions: demographic, clinical, functional, and environmental factors.

Ethical approval

The study protocol obtained ethical approval from the Ethics Committee for Clinical Research of Galicia. No identifiable information was collected. All of the data were fully anonymized. The confidentiality of the participants was preserved in accordance with the current Spanish Data Protection Law (15/1999).

Homebound status

The homebound status was evaluated by asking the participants how many days they left their home during the previous week. The caregiver answered this question when the participant had any cognitive impairment according to the Short Portable Mental Status Questionnaire (SPMSQ), which is a 10-item questionnaire with a total score ranging from 0 to 10. Cognitive impairment is indicated with a score ⩾3 points.[15] In line with previous studies,[8,12] the participants were considered homebound if they remained inside their home during the previous week or if they went out only for health care purposes (e.g., medical consultation or health emergencies).

Factors

Clinical factors

Mental status was measured using the Spanish-language version of SPMSQ. Walking ability was assessed by the Barthel Index[16]; this variable was dichotomized as independent versus limitation (e.g., personal help, wheelchair use, or immobile). Physician-diagnosed chronic conditions were obtained by reviewing the medical records of the participants with a checklist containing seven major groups. The impairments were assessed by medical records and interviews. Visual impairment was defined as a limited ability