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Prevalence, characteristics, and acute care utilization of disabled older adults with an absence of help for activities of daily living: Findings from a nationally representative survey

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ABSTRACT

Objective: The aim of this study was to investigate the prevalence, characteristics, and acute care utilization of community dwelling disabled older adults with an absence of help for activities of daily living (ADL).
Methods: We analyzed cross-sectional data from a nationally representative sample of people aged 65 years and over (n = 2904) participating in the 2009 National Health Interview Survey in Taiwan. Disability was defined as self-reporting a lot of difficulty or complete inability to carry out one or more ADL tasks. Participants with disability were asked whether they received help in the form of personal assistance or assistive devices to complete ADL tasks, with a yes response indicating the presence of help and a no response indicating the absence of help. Hospitalization and emergency department visits was assessed as a dichotomous variable (any or none), respectively.
Results: An absence of available help for ADL disability was reported in 16.6% of disabled older adults. Disabled older adults reporting an absence of help were more likely to be female. After adjustment for other factors, compared to older adults without disability, older adults with disability not receiving help for ADL tasks were highly related to hospitalization (OR = 4.57; 95%CI = [1.51–13.82]) and emergency department visits (OR = 3.52; 95%CI = [1.15–10.76]) during the past year, respectively.
Conclusions: We found that there is high prevalence of absence of help to perform ADL tasks in older adults with disability, and that this absence of help for ADL disability is associated with a greater burden of acute care utilization than those without disability.

1. Introduction

In Taiwan, older adults with disabilities have higher acute care utilization than those without disabilities (Li, Chang, Wang, & Bai, 2011), a finding in agreement with that reported from other populations (Chou & Chi, 2004; Walter-Ginzburg et al., 2001). Most previous studies of factors associated with acute care utilization in community dwelling older adults have focused on demographic characteristics, prior hospitalization, comorbidities, geriatric conditions, and functional assessment (Inouye et al., 2008; Landi et al., 2004; Stephens, Sackett, Govindarajan, & Lee, 2014; Wang, Sheu, Shyu, Chang, & Li, 2014). There is a lack of studies investigating the relationship between a lack of help for those with activity of daily living (ADL) disability and risk of acute care utilization.

In a longitudinal cohort study of frail older people who participated in a multidisciplinary program (Program of All-inclusive Care for the Elderly (PACE)) providing medical and psychosocial services and help for ADL needs, Sands and colleagues

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found that those with an absence of informal assistance or a paid caregiver for their ADL disabilities had higher rates of admissions than those who had assistance prior to enrolling in PACE. However, after 6 weeks of receiving PACE services, the number of admissions in those without help significantly declined (Sands et al., 2006). These findings highlight the importance of early identification of frail older people who live without needed help for ADL disabilities and that multidisciplinary interventions have the potential to reduce rates of admission in such vulnerable individuals.

Despite this evidence, to date the epidemiology of an absence of help for ADL disability among community dwelling older adults has yet to be adequately characterized. Many older persons living in the community report great difficulty and the need for help from a caregiver or assistive devices to carry out ADL tasks such as eating, bathing, dressing, using the toilet, getting in or out of bed, and walking across a small room (Allen & Mor, 1997; Casado, Van Vulpen, & Davis, 2011; Desai, Lentzner, & Weeks, 2001; Lima & Allen, 2001). Lima and Allen (2001) analyzed data from the Adult Followback to the National Health Interview Survey on Disability and found that quite different factors were associated with reporting no help at all versus insufficient help for disabilities. Older persons receiving no help were characterized by less severity of impairment, lower levels of insurance coverage, and less informal support availability than those who were receiving insufficient help. Their findings suggest that people with high levels of impairment simply cannot remain in the community for long with no help at all. However, Desai and colleagues analyzed cross-sectional data from a nationally representative sample of older adults aged 70 years and older and found that 20.7% of those needing help to perform ADL tasks reported receiving insufficient help or no help at all (Desai et al., 2001).

In view of these considerations, we analyzed cross-sectional data from a nationally representative sample of older adults aged 65 years and over in Taiwan. The main aim of this study was to investigate the prevalence, characteristics, and acute care use of older adults with an absence of help for ADL disability in Taiwan. The acute care utilization was assessed by respondents self-reported any (or none) hospital admission and emergency department visit during the last year, respectively. It was hypothesized that those who self-reported receiving no help for ADL disability would be highly related to hospital admission and emergency department visit compared to those without disability. We also aimed to describe the distribution of an absence of help for ADL disability and its associated characteristics.

2. Methods

2.1. Study population

The study population included participants in the National Health Interview Survey (NHIS) in Taiwan, 2009. This was a cross-sectional survey of a national sample based on a multistage stratified systematic sampling design which has been described in detail on the NHIS website (http://nhis.nhri.org.tw/) and a previous publication (Shih, Chang, Lu, & Hurng, 2014). In summary, a representative sample was drawn from the National Registry Database via multistage stratified sampling. Within each stratum, samples were selected with probability proportional to population size. Ethical approval was obtained from the Institutional Review Board of the National Health Research Institutes. All participants provided signed informed consent. The original sample comprised 25636 participants (response rate 84.0%), including 2904 individuals aged 65 years and above. Of these, we excluded 3 individuals with incomplete data regarding ADL tasks, leaving 2901 eligible participants.

2.2. Assessment of no help for ADL disability/Acute care utilization

Participants were asked to report their ability to perform functioning tasks consisting of six ADL (eating, bathing, dressing, using the toilet, getting in or out of bed, and walking across a small room). Participants were asked whether they could carry out these ADL activities with no difficulty, some difficulty, much difficulty or complete inability to carry them out. In this study, disability was defined as self-reporting much difficulty or complete inability to carry out one or more ADL tasks. Participants with disability were asked whether they received any help in the form of personal assistance (including formal and informal help) or assistive devices to perform their ADL tasks. A response of yes indicated the presence of help and a response of no indicated the absence of help. The dependent variables were respondents self-reported any hospital admission or emergency department visit in the previous year before the interview, respectively. Hospital admission and emergency department visits was assessed as a dichotomous variable (any or none), respectively.

2.3. Demographic characteristics, chronic diseases, and geriatric conditions assessment

Trained interviewers used standard questionnaires to collect data from participants on age, sex, years of education, marital status, and chronic diseases including diabetes, heart disease, hypertension, dyslipidemia, stroke, chronic obstructive pulmonary disease, and cancer. For each disease, participants were asked whether the diagnosis had been confirmed by a medical professional. Geriatric conditions were self-reported with conditions chosen for this study determined by the questions included in the 2009 NHIS, such as depressive symptoms, cognitive impairment, falls, and urinary incontinence. The 10 item version of the Center for Epidemiologic Studies Depression Scale (CES-D) was used to assess depressive symptoms (Radloff, 1977). Participants with scores from 10 to 30 were defined as having depressive symptoms (Andresen, Malmgren, Carter, & Patrick, 1994). The Mini-Mental State Examination (MMSE) was used to assess cognitive function after obtaining permission from the Psychological Assessment Resources (PAR), Inc. This scale provides a total score ranging from 0 to 30 points, with higher scores representing better cognitive function (Folstein, Folstein, & McHugh, 1975). As previous studies have shown that level of education significantly affects the points obtained in the Chinese version of the MMSE, the cut-point for cognitive impairment in this study was set according to educational level as recommended (Katzman et al., 1988). The cut-points were 17 for those participants who were illiterate and had no schooling, 20 for those with 1–6 years of education and 24 for those with 7 years or more of education. Falls were defined as having had at least one fall during the previous year. Urinary incontinence was defined as reporting any urine leakage during the previous year.

2.4. Statistical analysis

We used the Pearson's Chi-Square test to compare the characteristics of study participants with and without disability. We also used the Pearson's Chi-Square test to examine factors associated with the absence of help for ADL disability. Multiple logistic regression was used to examine the association of ADL disability and other factors with hospital admission and emergency department visits and for estimation of odds ratios (ORs) and 95% confidence intervals (CIs). To account for the complex sampling design, all analyses were carried out using SAS (SAS Institute, Cary, NC, USA)-callable SUDAAN (RTI, Research Triangle