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## Depression prevalence and treatment among older home health services users in the United States



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### ABSTRACT

**Objective:** The purpose of this study is to provide a nationally representative estimate of the rates of depression and depression treatment, and to explore factors associated with receipt of depression treatment, among older home health services users.

**Methods:** Older home health services users (n = 1666) were selected from 2008 to 2013 Medical Expenditure Panel Survey. Depression was measured by the Patient Health Questionnaire-2. Depression treatment included antidepressants use and receipt of mental health counseling or psychotherapy. Logistic regression was used to examine the association of individual characteristics and receipt of depression treatment.

**Results:** Current depression affected 23% of older home health services users. Less than 40% of those who screened positive for depression reported receiving depression treatment. Among those who received treatment, virtually all (99.8%) reported receiving antidepressants and only 9.5% reported receiving psychotherapy. Among older home health services users with current depression, older age and non-Hispanic black race were associated with lower odds of receiving depression treatment whereas having cognitive impairment was positively associated with receiving depression treatment.

**Conclusion:** Depression affects a substantial proportion of older home health services users and is undertreated. Home health services settings may be important platforms to improve depression care among older adults. Future research is needed to develop optimal strategies for integrating depression assessment and treatment in home health services settings.

### 1. Introduction

As many as 15% of adults 65 years or older living in the community have clinically significant depression and this rate is much higher among medical outpatients, medical inpatients, and residents of long-term care facilities (Blazer, 2003; Fiske, Wetherell, & Gatz, 2009). Depression in late life poses a serious threat to the health and survival of older adults. Research has consistently linked depression to a series of adverse outcomes, including elevated risk for chronic diseases, non-adherence to medication and treatment regimens, greater health services utilization and expenditures, functional impairment and disability, and shortened life expectancy (Barth, Schumacher, & Herrmann-Lingen, 2004; Schulz et al., 2000; Xiang & An, 2015a, 2015b). Even mild yet clinically relevant depressive symptoms can cause functional impairment comparable to or poorer than that of

chronic physical diseases such as heart disease and diabetes (Sriwattanakomen et al., 2008). Depression is also a significant risk factor for suicide. Suicide rates have historically been the highest among people 85 years and older relative to other age groups (Centers for Disease Control, 2015). However, due to multi-level factors such as ageism, stigma associated with mental illness and shortage of geriatric mental health providers, depressive symptoms are frequently missed, improperly diagnosed, and inadequately treated in older adults (Charney et al., 2003).

To improve identification and treatment of depression in late life, there has been a growing interest in coordination and integration of mental health services in the home health setting (Bruce et al., 2015; Choi et al., 2014; Ciechanowski et al., 2004; Gellis, Kenaley, & Have, 2014; Shao, Peng, Bruce, & Bao, 2011). Home health agencies provide a wide range of medical and social services that aim to promote health

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and minimize the effects of illness and disability, allowing people to maintain their daily lives. Services provided include skilled nursing care, physical therapy, occupational therapy, wound care, and assistance with activities of daily living (ADLs), instrumental activities of daily living (IADLs), and health maintenance tasks. Home health care has grown into an important source of health care for older adults. Findings from the National Survey of Long-Term Care Providers showed an estimated 12,400 regulated home health agencies served over 4.9 million patients in 2014 with most of users 65 years and older (Harris-Kojetin et al., 2006). Because home health services target patients confined to their homes due to illness and disability, older home health services users are generally sicker and have higher level of medical comorbidity compared with their ambulant counterparts (Bruce et al., 2002). Because medical comorbidity and disability are known risk factors for depression (Alexopoulos, 2005), rates of depression may be particularly high among older home health services users, highlighting the need for research on depression in this vulnerable population.

Several studies have estimated the prevalence of depression in older home health services users (Bruce et al., 2002; Ell, Unutzer, Aranda, Sanchez, & Lee, 2005; Morrow-Howell et al., 2008; Pickett, Raue, & Bruce, 2012; Shao et al., 2011). Estimated rates of major depressive disorder ranged from 8.5% (Ell et al., 2005) to 13.5% (Bruce et al., 2002). However, all but one of these studies used data from a specific geographic region and/or home health agency to generate prevalence estimates. The only study using national data focused on formal depression diagnosis from medical records (Shao et al., 2011), which most likely underestimate depression prevalence given that many individuals with depression do not seek formal care, and this is particularly true for older adults (Klap, Unroe, & Unutzer, 2003). In addition, only one study conducted over 15 years ago examined the extent to which home health patients received depression treatment (Bruce et al., 2002).

Important policy changes relevant to mental health treatment have occurred in the United States in the past decade, including the passage of the Mental Health Parity and Addiction Equity Act (MHPAEA) of 2008 and the Patient Protection and Affordable Care Act (ACA) of 2010. The ACA in conjunction with MHPAEA has expanded coverage of mental health benefits and requires coverage of mental health services at parity with general medical benefits (Beronio, Glied, & Frank, 2014). For older adults, several elements of the ACA have created opportunities to improve the detection and treatment of mental illness, including but not limited to, reducing the out-of-pocket cost burden of prescription drugs, Medicare annual wellness visit, and various delivery system and payment reforms intended to provide higher-quality, coordinated care (Bartels, Gill, & Naslund, 2015). As a result of these changes, an updated analysis of current rates of depression treatment among older home health care patients is needed to inform future research and policy. The purpose of this study is to provide a nationally representative estimate of the rates of depression and depression treatment, and to explore factors associated with depression treatment, among older home health services users. Investigating the current scope of depression prevalence and treatment will provide important information that can guide policy changes to support the integration of depression screening and treatment in home health agencies.

## 2. Subjects and methods

### 2.1. Data

This study analyzed data from the Household Component of the Medical Expenditure Panel Survey (MEPS-HC), a nationally representative survey of health services and expenditures for the US civilian, noninstitutionalized population. Sponsored by the Agency for Healthcare Quality and Research, the MEPS-HC collected data from a sample of families and individuals in selected communities across the US, following a multistage area probability design. More information about MEPS survey design, questionnaires, and relevant data are

available at its web portal (<http://meps.ahrq.gov/mepsweb/>). In this study, six years (2008–2013) of full-year MEPS-HC data files were pooled to maximize the statistical power of our analysis. The study sample was restricted to individuals aged 65 or older who had valid data on a depression measure and received formal home health care ( $n = 1666$ ). From 2008 to 2013, a total of 21,917 older adults responded to the questionnaire containing the depression measure and 20,817 had valid responses. Of these, 1666 reported receiving formal home health care.

### 2.2. Measure of home health care

MEPS respondents were asked if they received services in homes due to a health problem or condition. These services may be medical (e.g., physical therapy; checking temperature, blood pressure, and pulse and respiration rates; or helping to give medications) or personal (e.g., cleaning, repairs, cooking, or companionship). Additionally, they were asked who provided the care and for how long. Informal home health care refers to care provided by unpaid caregivers not residing with them (e.g., family members, friends, neighbors, or volunteers). Formal home health care refers to paid care from formal sources (e.g., home health agencies, hospitals, nursing homes, or self-employed home health aides). Only those who reported formal home health care were included in the study sample given on the study's focus on depression care improvement among home health agencies.

### 2.3. Measure of depression

The Patient Health Questionnaire-2 (PHQ-2) was used in the MEPS to screen for depression (Kroenke, Spitzer, & Williams, 2003). Intended for use in clinical practice, the PHQ-2 consists of two questions asking how often have the participant been bothered by “little interest or pleasure in doing things” and “feeling down, depressed or hopeless” over the last 2 weeks. Responses were on a 4-point Likert scale, from “not at all” (0), “several days” (1), “more than half the days” (2), to “nearly every day” (3). A composite PHQ-2 score ranges from 0 to 6 and a cut-off score of 3 is recommended (Kroenke et al., 2003). A PHQ-2 score of 3 has a sensitivity of 0.87 and a specificity of 0.78 for major depressive disorder; the same score has a sensitivity of 0.79 and specificity of 0.86 for any depressive disorder (Lowe, Kroenke, & Grafe, 2005).

### 2.4. Measure of depression treatment

Information about depression treatment was obtained from three MEPS event files containing information about prescribed medicines, outpatient visits, and office-based visits. Drug names were linked to the Lexicon Plus<sup>®</sup> database (Cerner Multum Inc, Denver CO). In the current study, use of antidepressants was identified using the second level of Multum code 249.

The outpatient and office-based visits event files contained information on types of care provided during these visits. “Mental health counseling/psychotherapy” was a listed response for care provided, defined as “a treatment technique for certain forms of mental disorders replying principally on verbal communications between the mental health professional and the patient”, including “care provided by any type of health professional as long as treatment is for mental health”. Use of psychotherapy was ascertained if respondents checked “mental health counseling/psychotherapy” as a type of care provided during any outpatient or office-based visit. Due to the small percentage of participants who indicated having received psychotherapy, a dichotomous indicator of any depression treatment was created by combining antidepressant use and receipt of mental health counseling/psychotherapy in multivariable analysis. A similar approach to assess depression treatment was used in a previous study (Agarwal, Pan, & Sambamoorthi, 2013).

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