Published in final edited form as:

J Aging Health. 2013 June ; 25(4): 638–655. doi:10.1177/0898264313484059.

Mental Health Service Use Among Depressed, Low-Income Homebound Middle-Aged and Older Adults

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Abstract

Objectives—This study examined previous mental health service use among low-income homebound middle-aged and older adults who participated in a study testing the feasibility and efficacy of telehealth problem-solving therapy for depression.

Method—The sample consisted of 188 homebound adults aged 50 years or older. Data on mental health service use were collected at baseline. We used multivariable logistic regression analysis to examine correlates of different types of outpatient service use within the preceding 12 months.

Results—Of the subjects, 56% reported mental health service use. Of the users, 80% had made at least one primary care mental health visit, 21% had visited a psychiatrist, and 25% had received counseling. Higher depressive symptom severity scores were positively associated with a psychiatrist visit only.

Discussion—The need to improve low-income homebound older adults' access to psychotherapy was clearly evident.

Keywords

mental health; frailty; geriatrics

Community-dwelling older adults with mental disorders are significantly less likely than their younger counterparts to perceive a need for professional mental health services and to seek help (Karlin, Duffy, & Gleaves, 2008; Klap, Unroe, & Unützer, 2003; Mackenzie, Pagura, & Sareen, 2010). Studies based on the Collaborative Psychiatric Epidemiologic Surveys (CPES) found that less than 30% of those aged 55 or older with mood and/or anxiety disorders had used any mental health services in the preceding year (Byers, Arean, & Yaffe, 2012; Mackenzie et al., 2010). Analysis of older Medicare fee-for-service beneficiaries (aged 65 or older) between 2003 and 2005 found that less than a quarter of those with a depression diagnosis received any treatment for their depression (Akincigil et al., 2011). These studies also showed that for the majority of older adults who used any

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Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

mental health service, their treatment consisted of pharmacotherapy from primary care physicians (PCPs), while only a small minority received psychotherapy from specialty mental health care providers. Among Medicare beneficiaries with a depression diagnosis, the proportion receiving antidepressants increased from 53.7% to 67.1% between 1992 and 2005, whereas the proportion receiving psychotherapy declined from 26.1% to 14.8% during the same period (Akincigil et al., 2011).

Barriers to older adults' mental health service use are at both personal and provider/system levels. Older adults tend to have low perceived need for mental health care, possibly stemming from a lack of insight into psychological problems, high perceived sense of stigma, and high self-sufficiency beliefs (i.e., wishing to handle the problem oneself and discomfort at discussing problems with a professional; Byers et al., 2012; Ell, 2006; Mackenzie et al., 2010). However, diagnoses, suicidal behaviors, and severe symptom severity are strong predictors of perceived need and/or treatment use (Byers et al., 2012; Mackenzie et al., 2010). Byers et al. (2012) also found that nonuse of mental health services was significantly associated with being in the married/cohabiting state as opposed to being in the separated/divorced/widowed/never married state; being in a racial/ethnic minority as opposed to being non-Hispanic White; and having a middle income (>1.5-6.0 times the poverty line) as opposed to having a high income (>6.0 times the poverty line). Choi, Bruce, Marinucci, Sirrianni, and Kunik (2012) also found that when depressive symptom severity was controlled for, older age and African American ethnicity were associated with lower odds of taking antidepressant medication. The authors noted that married/cohabiting older adults may perceive their spouse/partner as a satisfactory provider of care; that stigma related to mental disorder may be stronger among racial/ethnic minority older adults than among their non-Hispanic White counterparts; and that resources for treatment may be more readily available among older adults with high income, as they can afford copays, or those with low income since their treatment may be covered by Medicaid.

Provider- and system-level barriers include the lack of attention to depression in healthcare and aging service settings; the shortage of a geriatric mental health workforce; the lack of coordination and collaboration between providers in primary care, long-term care, and specialty mental health care; and inadequate or discriminatory financing of mental health services for older adults (Bartels, 2003; Ell, 2006). In home health care and aging service settings, service providers may lack specific training in dealing with depression and feel uncomfortable with assessing it (Choi & Kimbell, 2009; Choi, Lee, & Goldstein, 2011; Larson, Chernoff, & Sweet-Holp, 2004).

The purpose of the current study was to examine the patterns and correlates of different types of mental health service use (primary care mental health visits, psychiatrist visits, and psychologist/social worker counseling) among low-income homebound older adults prior to their participation in a study that was testing the feasibility and efficacy of telehealth problem-solving therapy for depression. Because of their disability and social isolation, homebound older adults are more vulnerable to depression than their ambulatory peers (Bruce et al., 2002; Choi, Teeters, Perez, Farar, & Thompson, 2010; Ell, Unützer, Aranda, Sanchez, & Lee, 2005; Sirey et al., 2008). Moreover, a significant proportion of depressed homebound older adults does not seek and receive treatment for their depression because of both personal and systemic barriers previously mentioned. As in the case of older adults in general, receiving prescriptions of antidepressant and/or anxiolytic medications from their PCP tends to be the most prevalent form of treatment for low-income and/or homebound older adults with mental disorders (Gum et al., 2011; Gum, Iser, & Petkus, 2010; Simning, van Wijngaarden, Fisher, Richardson, & Conwell, 2012). However, outpatient psychotherapy services tend to be inaccessible for low-income, homebound older adults because (a) even with Medicare, they cannot afford the 50% copay required for mental

health visits; (b) they have difficulty finding transportation to office-based psychotherapy; (c) there is a lack of home-based psychotherapy services for them (Choi & Kimbell, 2009).

In examining the correlates of different types of mental health service use, we employed Andersen's (1995) behavioral model of health service use as the conceptual framework. The behavioral model suggests that people's use of health services is a function of their predisposition to use services, of factors that enable or impede use, and of their need for care. Of *predisposing factors*, we examined age, gender, and race/ethnicity. Of *enabling factors*, we examined marital status as a measure of family/social support, level of education, private or U.S. Department of Veterans Affairs insurance coverage, and the level of disability. Of *need factors*, we examined depressive symptoms. Based on the findings of previous studies discussed previously (Byers et al., 2012; Choi et al., 2012; Choi & Kimbell, 2009; Mackenzie et al., 2010), the study hypotheses were as follows:

Hypothesis 1 (H1): The PCP-MH visits will be positively associated with older age, female gender, higher level of disability, and higher depressive symptom severity, but negatively associated with African American or Hispanic ethnicity and married/cohabiting state.

Hypothesis 2 (H2): Psychiatrist visits will be positively associated with female gender, a higher level of education, private or U.S. Department of Veterans Affairs insurance coverage, and higher depressive symptom severity, but negatively associated with older age and African American or Hispanic ethnicity.

Hypothesis 3 (H3): Psychologist/social worker visits will be positively associated with female gender, but negatively associated with older age, African American or Hispanic ethnicity, and a higher level of disability.

This study contributes to understanding of the patterns and correlates of mental health service use among one of the most vulnerable groups of middle-aged and older adults—those who are low income and homebound. No previous research has examined mental health service use patterns among this group. Despite their high rates of depression and significant barriers to treatment access, they have been largely underexposed in research on depression and its treatment.

Method

Participants

The sample consisted of homebound adults, aged 50 or older, who participated in a study that examined the feasibility and efficacy of short-term, tele-health (videoconferencing) problem-solving therapy. Consistent with the Medicare eligibility criteria for receipt of home health services (U.S. Department of Health and Human Services, 2012), homebound older adults were defined in this study as those who, due to medical conditions and/or mobility-affecting impairments, cannot freely leave their home and who require help in doing so. Homebound adults aged 50 to 64 years were included in the study, given their high rate of depression and low rate of supplemental insurance coverage (other than Medicare and/or Medicaid), as shown in our previous study (Choi et al., 2010). Case managers at a large Meals on Wheels program and other aging-service network agencies serving low-income homebound older adults in central Texas referred to the project those who spoke English and scored 5 or higher on the Patient Health Questionnaire-9 (PHQ-9; Kroenke & Spitzer, 2002; Kroenke, Spitzer, & Williams, 2001) or who showed other signs of depression. (The PHQ-9 was not administered when privacy was not guaranteed due to the presence of a caregiver or other people.)

Referred individuals were administered the 24-item Hamilton Rating Scale for Depression (HAMD; Depression Rating Scale Standardization Team, 2003), and only those with HAMD >10 (i.e., with mild to severe depressive symptoms) proceeded to baseline assessment. In addition to those with low HAMD score (<10), the following were excluded from the study: those with probable dementia (assessed with the Mini-Cog; Borson, Scanlan, Brush, Vitaliano, & Dokmak, 2000), bipolar disorder (assessed with the Mood Disorder Questionnaire; Hirschfeld et al., 2003), 12-month or lifetime psychotic symptoms or disorder (assessed with the CIDI Psychosis Screen; World Health Organization, 2004), and presence of co-occurring alcohol or other addictive substance abuse (assessed with CAGE-AID; Brown & Rounds, 1995). The study was approved by the Institutional Review Board of the University of Texas at Austin.

Between August 2009 and April 2012, the case managers referred 236 homebound older adults, and all were screened for eligibility. Of these, 48 did not meet the eligibility criteria because of low HAMD scores ($n = 21$), probable dementia ($n = 9$), other mental health problems and/or substance use disorder ($n = 11$), and other reasons ($n = 7$; i.e., moving to a nursing home; too sick to participate; age < 50; refusal to participate) and did not proceed to baseline assessment. The final sample thus consisted of 188 individuals aged 50 or older who participated in the baseline assessment in which the *DSM-IV-TR* diagnostic interview for depression was conducted and mental health service use data were collected. All eligibility screening and assessments for the study participants were conducted by four licensed master's-level social workers who were trained and supervised by a PhD clinical geropsychologist. Although additional exclusion criteria for the parent study included moderate or severe suicidal ideation or behavior (a score of 1 on item 9 of the PHQ-9, with verbalized intent or plan to attempt suicide within a month, or 3 on "suicide" on the HAMD) and current involvement in psychotherapy, no referred older adult was at the specified suicide risk or receiving psychotherapy at the time of screening, which may have resulted from the case managers' awareness, when referring potential participants, of the eligibility criteria for study participation.

Sample selection bias due to the fact that the sample consisted of those who expressed interest in participating in a study of the feasibility and efficacy of a depression treatment and due to the exclusion of those at high suicide risk and psychotherapy patients are discussed further in the Discussion section. All study participants had access to a PCP (a condition for receiving home-delivered meals and/or a result of case management) and all except 4 participants (2%) had Medicare and/or Medicaid (91%) or other health insurance (e.g., Tricare, employer-provided health insurance [own or spouse's]; 7%).

Measures

Mental health service use—The study participants provided the dates/time periods of and reasons for any inpatient and/or outpatient mental health service use. For outpatient visits that had occurred within 12 months of the baseline assessment, data were collected on providers/types of such visits (primary care mental health [PCP-MH] visit [prescription from PCP], psychiatrist visit, counseling from psychologist or social worker, and pastoral consultation/counseling from clergy), along with the reasons for (depression, both depression and anxiety, anxiety, or other) and the number of the visits. Data on perceived effectiveness of the most recent treatment were also collected on a 5-point scale (1 = *not at all effective*; 5 = *very effective*). Several probes were used to increase the validity of the self-reported data. For example, for those who could not remember exact dates of their visits, the assessors asked, first, whether they had any visits scheduled currently, then, if they had had any visits within the preceding 3 months, or within the preceding 6 months, or within the preceding year, and so forth. For those who reported that they were taking antidepressant

and/or antianxiety medication, the names and doses of the medications were collected from the original medication containers and/or participant-provided lists of all medications they were taking. (These lists had been compiled by participants' family members, visiting nurses, case managers, PCPs, or as part of a hospital/emergency department discharge summary.)

Predisposing Factors—Age was used as a continuous variable. Gender was female versus male (reference category), and race/ethnicity was African American, Hispanic, and non-Hispanic White (reference category).

Enabling Factors—These were marital status (married/cohabiting vs. not married/cohabiting); level of education (high school vs. some college); any insurance coverage supplemental to Medicare or Medicaid (employer-provided private health insurance, Medicare supplemental insurance, and/or U.S. Department of Veterans Affairs insurance; yes vs. no); and the combined number of activity of daily living and instrumental activity of daily living (ADLs/IADLs) impairments to represent the level of disability. The ADLs included feeding oneself, bathing, toileting, dressing, grooming, and getting into/out of bed, and the IADLs included grocery shopping, preparing meals, using the telephone, doing housework or handyman work, taking medications, and managing money. Income was not included as an enabling factor due to the lack of variability, with only 8 participants reporting an annual family income of US\$35,001 or higher.

Need Factors—Depressive symptoms were measured with the 24-item HAMD. It consists of the GRID-HAMD-21 Structured Interview Guide (Depression Rating Scale Standardization Team, 2003) augmented with three additional items assessing feelings of hopelessness, helplessness, and worthlessness, with specific probes and follow-up questions developed by Moberg et al. (2001).

Analysis

Following univariate analysis of the participants' characteristics (including those of predisposing, enabling, and need factors), the participants' mental health service use history (any inpatient or outpatient use during each participant's lifetime and within the preceding 12 months) was examined. Then, focusing on the 12-month outpatient use, the provider/type of services (PCP-MH visits, psychiatrist visits, counseling from psychologists or social workers, and clergy visits), reasons for and number of visits (depression, anxiety, or both), and the perceived effectiveness of the most recent treatment were assessed. The study hypotheses were tested using binary logistic regression analysis, with the PCP-MH visits, psychiatrist visits, and counseling from psychologists or social workers as the dependent variables. The independent variables for the logistic regression analysis were age, gender, race/ethnicity (predisposing factors), marital status, level of education, coverage of private health insurance, Medicare supplemental insurance, and/or U.S. Department of Veterans Affairs insurance, number of ADL/IADL impairments (enabling factors), and baseline depressive symptom severity (HAMD) score (need factor). The fourth type of mental health service use, clergy visits, was not examined in the multivariable analysis as only 1 participant reported it.

Results

Participant Characteristics

The demographics of the study participants closely reflect those of the older adults served by the aging service agencies in central Texas. Table 1 shows that 56.8% of the participants were African American or Hispanic; participants' mean age was 65.3 ± 9.8 (28% were

between 50 and 59, 42% between 60 and 69, 19% between 70 and 79, and 11%, 80+); 76.6% were female; 17.6% were married/cohabiting; 83.5% had family income US\$25,000 (62.2% had family income US\$15,000); and 43.1% had a high school diploma or lower. The mean ADL/IADL score, 4.22 ± 2.38 , indicates a high level of disability. The mean HAMD score was 23.0 ± 7.5 , and 60.6% had major depressive disorder (MDD; 37.8% with recurrent episodes and 22.8% with single episode). Further analysis (not shown in Table 1) found no significant difference in HAMD scores by gender, age, race/ethnicity, marital status, education, and income, or by antidepressant and anxiolytic medication intake status.

Mental Health Service Use Patterns

Table 2 shows that 20.2% of the participants reported that they had never used any mental health service during their lifetime, and 1.6% ($n = 3$) reported having used inpatient hospitalization only, 62.8% outpatient services only, and 15.4% both inpatient and outpatient services. During the preceding 12 months, 44.1% reported not having used any mental health service, 0.5% ($n = 1$) reported having used inpatient hospitalization only, 53.2% reported outpatient care only, and 2.1% reported both inpatient and outpatient care.

Of those who reported only outpatient service over the past 12 months ($n = 104$), 79.8% had at least one PCP-MH visit and received a prescription for antidepressant medication, 21.2% had visited a psychiatrist at least once, 25% had at least one counseling session with a psychologist/social worker, and 1% ($n = 1$) had visited a clergyperson. Further analysis found that of those who had PCP-MH visits, 5% also visited a psychiatrist and 22.5% also received counseling from a psychologist or a social worker. Of those who saw a psychiatrist, 27.3% also received counseling from a psychologist or a social worker. Of those who received counseling, approximately 58% had 4 sessions of psychotherapy. A majority of those who received counseling used the programs offered by public mental health service agencies on a monthly or quarterly basis. Independent samples t tests found that the HAMD scores were not significantly associated with the PCP-MH visit and the counseling visit. However, those who reported a psychiatrist visit had a significantly higher mean HAMD score than those who did not (26.0 ± 7.6 vs. 22.1 ± 6.7 , $p = .02$). Chi-square analysis found no significant relationship between diagnosis of MDD and the type of mental health service used.

An absolute majority (91.4%) of the 12-month outpatient service users stated that they had used the services because of depression or both depression and anxiety, while 8.6% stated that anxiety, without depression, was the reason. About 52% of the outpatient service users perceived that their most recent treatment was effective or very effective, 31% perceived it as being a little or somewhat effective, and 17% reported that they did not perceive any effectiveness or that they could not tell/did not know whether the treatment had been effective. Further analysis found that the perceived effectiveness ratings were not significantly correlated with HAMD scores ($r = .04$, $p = .67$), diagnosis of MDD ($t = 0.73$, $p = .47$), gender ($t = 1.29$, $p = .20$), and race/ethnicity ($F_{2, 101} = 0.01$, $p = .99$).

Correlates of Mental Health Service Use Within 12 Months

Presented in Table 3 are the results of logistic regression analyses. Only gender and marital status were significantly associated with PCP-MH visits. Female gender was positively associated with the visit, but married/cohabiting state was negatively associated with the visit. For psychiatrist visits, having at least some college education and having a higher HAMD score were positively associated with the visit. For psychologist or social worker counseling, being African American, as opposed to being non-Hispanic White, was negatively associated with the visit. Age, the number of ADL/IADL impairments, and

supplemental insurance coverage were not associated with any type of mental health service use.

Discussion

This study found that a little more than half of the depressed, low-income homebound older adult participants had used mental health services in the preceding 12 months. This utilization rate was similar to the rates found in previous studies of older adults who were receiving home-based aging services (Gum et al., 2010) and those who were public housing residents (Simning et al., 2012), but it was relatively higher than those (<30%) found in Medicare beneficiaries (aged 65 or older) with a depression diagnosis and in older adults (aged 55 or older) with mood and/or anxiety disorders in the Collaborative Psychiatric Epidemiologic Surveys (Akincigil et al., 2011; Byers et al., 2012). The generally higher rates of mental health service use among older adults receiving aging and other community-based services and/or living in public housing than those among the general older adult population may be attributable to their receipt of case management services from the service providers. A study of home-delivered meals programs across the country found that the program staff members/volunteers often encourage depressed clients to seek treatment and/or make referrals to the clients' PCPs (Choi et al., 2011). The participants in the current study had received case management services that included encouragement to seek mental health treatment and referrals to PCPs. Nevertheless, almost half of the study participants reported that they had not used any mental health service within the preceding 12 months.

The most common source of mental health care for low-income home-bound adults aged 50 years or older is their PCP. About four fifths of the mental health service users had received a prescription for their depression and/or anxiety from their PCP, about one fifth had consulted a psychiatrist, and about one quarter had received counseling from a psychologist or a social worker.

Our hypotheses about the correlates of mental health service use are partially supported. As in previous studies (Byers et al., 2012; Lindamer et al., 2012; Rhodes, Goering, To, & Williams, 2002), female gender was a positive correlate of the PCP-MH visit, while the married/cohabiting state was a negative correlate. A higher level of education and higher HAMD scores were positively associated only with psychiatrist visits, and being African American was negatively associated only with counseling from a psychologist/social worker. It is likely that those with more education may have better understood mental health problems and been more likely to seek a psychiatrist's help than those with less education and that those with higher levels of depressive symptoms may also have been more likely to have been referred and gone to a psychiatrist. The reasons for the lower rates of counseling use among African Americans are unknown and deserve further study. As suggested by previous studies (Byers et al., 2012; Mackenzie et al., 2010), stigma about having mental health problems, discomfort with discussing the problems with other people, desire to handle the problems on their own, and religious coping may have contributed to the low likelihood of African Americans' seeking counseling.

Although supplemental insurance coverage was not a significant correlate of any mental health service use, the participants' lack of financial resources (with 84% of them having income <US\$25,000) needs to be considered in discussions of access barriers. Low-income, depressed older adults, as compared with their middle- and high-income age peers, tend to have more health, functional, and psychosocial problems co-occurring with depressive symptoms, and they do not see depression as a high priority compared with cooccurring problems, particularly psychosocial problems (Proctor, Hasche, Morrow-Howell, Shumway, & Snell, 2008). Immediate life demands such as paying rent and utility bills and other

concerns related to making ends meet, not treatment of depression, also becomes a top priority in these older adults' daily lives. Further research is needed to discern both personal and structural reasons for and the influence of competing life demands on the lower rate of mental health service use among low-income homebound older adults.

The study has some limitations. First, the sample was restricted to those who were willing to participate in a feasibility and efficacy study of a psychotherapy intervention for depression. Depressed individuals who chose not to participate were not included, resulting in a sample that is likely to have over-represented those more inclined to seek treatment. Thus the utilization rate may have been overestimated although it was similar to the utilization rates that were found in previous studies of older adults receiving home-based aging services and older public housing residents. Second, the study focused on those who were not participating in any psychotherapy at the time of baseline assessment. Although no referred individual was found to have been receiving psychotherapy at baseline, this may be a result of the case managers' awareness of the exclusion criterion. Thus the rate of participation in counseling among the target population may have been underestimated. Third, although probes were used to jog the participants' recollection, self-reported mental health service use may still have been subject to recall bias especially among depressed homebound older adults. Fourth, the study did not address the adequacy of mental health care. In our previous study (Choi et al., 2012), we found doses of antidepressants for almost all participants to be adequate. However, we had no way of evaluating the adequacy of psychotherapy. The number of counseling visits (with 42% having had fewer than 4 sessions of psychotherapy) and perceived effectiveness ratings were not sufficient measures of adequacy.

Given the possible sampling and recall bias and the limited geographic area where the participants were recruited, we do not claim generalizability of the findings. However, the study findings provide the first detailed picture of mental health service use among the most vulnerable and growing population of low-income homebound older adults who have been underexposed in research on mental health service use, and they confirm the low rate of mental health service use in this group of older adults. The low rate of mental health service use among these older adults has significant public health implications. As discussed, low-income homebound older adults are more vulnerable to depression than their ambulatory peers. However, only about one half of depressed, low-income homebound older adult participants in this study had accessed any depression treatment in the preceding 12 months. Regardless of its severity, untreated depression among older adults has serious negative health effects and increases functional impairments, which in turn results in higher rates of health care service use, premature institutionalization, and mortality (Lyness, 2008; Lyness et al., 2007; Yaffe, Edwards, Covinsky, Lui, & Eng, 2003). The finding that HAMD scores were not associated with the PCP-MH and counseling visits suggests that even those who could have benefited from treatment did not access it, possibly due to mobility impairment, transportation difficulty, and system and personal/attitudinal barriers. Without treatment, homebound older adults with moderate to severe depressive symptoms may develop more serious depression and experience increased functional and psychosocial impairment.

Although treatment access barriers appear to be rooted in both personal and systemic factors, the findings show that these older adults' PCPs play an important role, as almost 80% of the older adults who received treatment did so from their PCPs. Given this finding, PCPs can play an even more important role in screening and treating depression among a larger proportion of low-income homebound older adults. Because of their chronic medical conditions and frailty, these older adults tend to see their PCPs on a regular basis. Although limited consultation time even for physical and functional health conditions is a problem, the PCPs for homebound older adults, especially homebound older men, need to at least screen and discuss their mental health problems. The older adults' case managers also need to

continue to play an active role in encouraging them to consult their PCPs and refer them to the physicians.

At the same time, reliance on PCP-MH visits for treatment of depression in low-income older adults raises serious concerns, given the limited effectiveness of antidepressant medications, especially among low-income older adults with many comorbid physical, functional, and psychosocial issues (Cohen et al., 2006; Kales & Valenstein, 2005; Nelson, Delucchi, & Schneider, 2008). Many depressed, low-income homebound older adults have a limited response to medication alone, in part because of co-occurring deficits in resources and coping skills for such stressors as disability, social isolation, and financial deprivation. Such older adults may benefit from psychotherapy that can help them improve coping skills for their multiple life stressors, along with case management that can link them to financial and other resources.

Future research needs to focus on removing both personal and systemic barriers to these older adults' access to psychotherapy.

Acknowledgments

We thank the study participants, Leslie Sirrianni, Mary Lynn Marinucci, JAH anonymous reviewers, and JAH editors for their helpful comments and suggestions.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was funded by the National Institute of Mental Health (R34 MH083872; PI: Choi NG); St. David's Foundation (PI: Choi NG); the Mitte Foundation; and VA HSR&D Houston Center of Excellence (HFP90-020). The views expressed are those of the authors and not necessarily those of the funders and the Department of Veterans Affairs/Baylor College of Medicine.

References

- Akincigil A, Olfson M, Walkup JT, Siegel MJ, Kalay E, Amin S, Crystal S. Diagnosis and treatment of depression in older community-dwelling adults: 1992-2005. *Journal of the American Geriatrics Society*. 2011; 59:1042–1051. [PubMed: 21649631]
- Andersen RM. Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior*. 1995; 36:1–10. [PubMed: 7738325]
- Bartels SJ. Improving system of care for older adults with mental illness in the United States: Findings and recommendations for the President's New Freedom Commission on Mental Health. *American Journal of Geriatric Psychiatry*. 2003; 11:486–497. [PubMed: 14506082]
- Borson S, Scanlan J, Brush M, Vitaliano P, Dokmak A. The mini-cog: A cognitive “vital signs” measure for dementia screening in multi-lingual elderly. *International Journal of Geriatric Psychiatry*. 2000; 15:1021–1027. [PubMed: 11113982]
- Brown RL, Rounds LA. Conjoint screening questionnaire for alcohol and other drug abuse: Criterion validity in a primary care practice. *Wisconsin Medical Journal*. 1995; 94:135–140. [PubMed: 7778330]
- Bruce ML, McVay GJ, Raue PJ, Brown EL, Meyers BS, Keohane DJ, Weber C. Major depression in elderly home health care patients. *American Journal of Psychiatry*. 2002; 159:1367–1374. [PubMed: 12153830]
- Byers AL, Areal PA, Yaffe K. Low use of mental health services among older Americans with mood and anxiety disorders. *Psychiatric Services*. 2012; 63:66–72. [PubMed: 22227762]
- Choi NG, Bruce ML, Marinucci ML, Sirrianni L, Kunik ME. Self-reported antidepressant use among depressed, low-income homebound older adults: Class, type, correlates, and perceived effectiveness. *Brain and Behavior*. 2012; 2:176–186.
- Choi NG, Kimbell K. Depression care need among low-income older adults: Views from aging-service providers and informal caregivers. *Clinical Gerontologist*. 2009; 32:60–76.

- Choi NG, Lee A, Goldstein M. Meals on Wheels: Exploring potential for and barriers to integrating depression intervention for homebound older adults. *Home Health Care Services Quarterly*. 2011; 30:214–230. [PubMed: 22106903]
- Choi NG, Teeters M, Perez L, Farar B, Thompson D. Severity and correlates of depressive symptoms among recipients of Meals in Wheels: Age, gender, and racial/ethnic difference. *Aging & Mental Health*. 2010; 14:145–154. [PubMed: 19946802]
- Cohen A, Houck PR, Szanto K, Dew MA, Gilman SA, Reynolds CF. Social inequalities in response to antidepressant treatment in older adults. *Archives of General Psychiatry*. 2006; 63:50–56. [PubMed: 16389196]
- Depression Rating Scale Standardization Team. GRID-HAMD-17, GRID-HAMD-21 Structured Interview Guide. International Society for CNS Drug Development; San Diego, CA: 2003.
- Ell K. Depression care for the elderly: Reducing barriers to evidence based practice. *Home Health Care Services Quarterly*. 2006; 25:115–148. [PubMed: 16803741]
- Ell K, Unützer J, Aranda M, Sanchez K, Lee P. Routine PHQ-9 depression screening in home health care: Depression prevalence, clinical and treatment characteristics, and screening implementation. *Home Health Care Services Quarterly*. 2005; 24:1–19. [PubMed: 16446263]
- Gum AM, Iser L, King-Kallimanis BI, Petkus A, DeMuth A, Schonfeld L. Six-month longitudinal patterns of mental health treatment utilization by older adults with depressive symptoms. *Psychiatric Services*. 2011; 62:1353–1360. [PubMed: 22211216]
- Gum AM, Iser L, Petkus A. Behavioral health service utilization and preferences of older adults receiving home-based aging services. *American Journal of Geriatric Psychiatry*. 2010; 18:491–501. [PubMed: 21217560]
- Hirschfeld RM, Holzer C, Calabrese JR, Weissman M, Reed M, Davies M, Hazard E. Validity of the Mood Disorder Questionnaire: A general population study. *American Journal of Psychiatry*. 2003; 160:178–180. [PubMed: 12505821]
- Kales HC, Valenstein M. Complexity in late-life depression: Impact of confounding factors on diagnosis, treatment, and outcomes. *Journal of Geriatric Psychology and Neurology*. 2005; 15:147–155.
- Karlin BE, Duffy M, Gleaves DH. Patterns and predictors of mental health service use and mental illness among older and younger adults in the United States. *Psychological Services*. 2008; 5:275–294.
- Klap R, Unroe KT, Unützer J. Caring for mental illness in the United States: Focus on older adults. *American Journal of Geriatric Psychiatry*. 2003; 11:517–524. [PubMed: 14506085]
- Kroenke K, Spitzer RL. The PHQ-9: A new depression diagnostic and severity measure. *Psychiatric Annals*. 2002; 32:509–515.
- Kroenke K, Spitzer RL, Williams JB. The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*. 2001; 16:606–813. [PubMed: 11556941]
- Larson JS, Chernoff R, Sweet-Holp TJ. An evaluation of provider educational needs in geriatric care. *Evaluation & the Health professions*. 2004; 27:95–103. [PubMed: 14994562]
- Lindamer LA, Liu L, Sommerfeld DH, Folsom DP, Hawthorne W, Garcia P, Jeste DV. Predisposing, enabling, and need factors associated with high service use in a public mental health system. *Administration and Policy in Mental Health*. 2012; 39:200–209. [PubMed: 21533848]
- Lyness JM. Naturalistic outcomes of minor and subsyndromal depression in older primary care patients. *International Journal of Geriatric Psychiatry*. 2008; 23:773–781. [PubMed: 18200611]
- Lyness JM, Kim J, Tang W, Tu X, Conwell Y, King D, Caine ED. The clinical significance of subsyndromal depression in older primary care patients. *American Journal of Geriatric Psychiatry*. 2007; 15:214–223. [PubMed: 17213374]
- Mackenzie CS, Pagura J, Sareen J. Correlates of perceived need for and use of mental health services by older adults in the Collaborative Psychiatric Epidemiology Surveys. *American Journal of Geriatric Psychiatry*. 2010; 18:1103–1115. [PubMed: 20808105]
- Moberg PJ, Lazarus LW, Mesholam RI, Bilker W, Chuy IL, Neyman I, Markvart V. Comparison of the standard and Structured Interview Guide for the Hamilton Depression Rating Scale in depressed geriatric inpatients. *American Journal of Geriatric Psychiatry*. 2001; 9:35–40. [PubMed: 11156750]

- Nelson JC, Delucchi K, Schneider LS. Efficacy of second generation antidepressants in late-life depression: A meta analysis of the evidence. *American Journal of Geriatric Psychiatry*. 2008; 16:558–567. [PubMed: 18591576]
- Proctor EK, Hasche L, Morrow-Howell N, Shumway M, Snell G. Perceptions about competing psychosocial problems and treatment priorities among older adults with depression. *Psychiatric Services*. 2008; 59:670–675. [PubMed: 18511588]
- Rhodes AE, Goering PN, To T, Williams JI. Gender and outpatient mental health service use. *Social Science & Medicine*. 2002; 54(1):1–10. [PubMed: 11820673]
- Simning A, van Wijngaarden E, Fisher SG, Richardson TM, Conwell Y. Mental healthcare need and service utilization in older adults living in public housing. *American Journal of Geriatric Psychiatry*. 2012; 20:441–451. [PubMed: 22522961]
- Sirey JA, Bruce ML, Carpenter M, Booker D, Reid MC, Newell K-A, Alexopoulos GS. Depressive symptoms and suicidal ideation among older adults receiving home-delivered meals. *International Journal of Geriatric Psychiatry*. 2008; 23:1306–1311. [PubMed: 18615448]
- U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services. Medicare benefit policy manual: Chapter 15 –Covered medical and other health services (60.4.1 – Definition of homebound patient under the Medicare home health [HH] Benefit). 2012. Retrieved from www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/bp102c15.pdf
- World Health Organization. The World Mental Health Composite International Diagnostic Interview (WMH-CIDI). 2004. Retrieved from www.hcp.med.harvard.edu/wmhcid/i/instruments_capi.php
- Yaffe K, Edwards ER, Covinsky KE, Lui L, Eng C. Depressive symptoms and risk of mortality in frail, community-living elderly persons. *American Journal of Geriatric Psychiatry*. 2003; 11:561–567. [PubMed: 14506090]

Table 1Participant Characteristics (*N* = 188).

Age (year)	
Mean $\pm$ <i>SD</i>	65.28 $\pm$ 9.79
Range	50-90
Gender, <i>n</i> (%)	
Male	44 (23.4)
Female	144 (76.6)
Race/ethnicity, <i>n</i> (%)	
Non-Hispanic White	81 (43.1)
African American	63 (33.5)
Hispanic	44 (23.3)
Marital status (%)	
Married/cohabiting	33 (17.6)
Not married/cohabiting	155 (82.4)
Living arrangement, <i>n</i> (%)	
Living alone	119 (63.3)
Living with someone	69 (36.7)
Education, <i>n</i> (%)	
High school	81 (43.1)
Some college	107 (56.9)
Family income, <i>n</i> (%)	
US\$25,000	157 (83.5)
US\$25,001-US\$35,000	12 (6.4)
US\$35,001+	8 (4.2)
Don't know/refused	11 (5.8)
ADL/IADL impairment	4.22 $\pm$ 2.38
Health insurance, <i>n</i> (%)	
Medicare	152 (80.9)
Medicaid	60 (31.9)
Private/DVA insurance	65 (34.6)
No insurance	4 (2.1)
24-item HAMD score	
Mean $\pm$ <i>SD</i>	22.98 $\pm$ 7.52
Median	22.0
Range	10-42
Depression diagnosis, <i>n</i> (%)	
Major depressive disorder, recurrent	71 (37.8)
Major depressive disorder, single episode	43 (22.8)
Depressive disorder-NOS	65 (34.6)
Dysthymic disorder	9 (4.8)

Table 2**Mental Health Service Use (%).**

History of Mental Health Service Use (<i>n</i> = 188)	
Lifetime	
Never used mental health service	38 (20.2)
Inpatient hospitalization only	3 (1.6)
Outpatient care only	118 (62.8)
Both inpatient and outpatient care	29 (15.4)
Within preceding 12 months	
Did not use	83 (44.1)
Inpatient only	1 (0.5)
Outpatient care only	100 (53.2)
Both inpatient and outpatient care	4 (2.1)
Current medication	
Antidepressant	90 (47.9)
Anxiolytic	67 (35.6)
Outpatient service use within 12 months (<i>n</i> = 104)	
Provider/type	
Prescription from PCP	83 (79.8)
Psychiatrist visit	22 (21.2)
Counseling from psychologist/social worker	26 (25.0)
Clergy visit	1 (1.0)
Reasons	
Depression	58 (55.8)
Both depression and anxiety	36 (34.6)
Anxiety	9 (8.6)
Number of visits	
1-3 visits	58 (55.8)
4+ visits	46 (44.2)
Perceived effectiveness of the most recent visit	
Not sure/cannot tell	11 (10.6)
1 (<i>Not at all effective</i>)	7 (6.7)
2	12 (11.5)
3	20 (19.3)
4	21 (20.2)
5 (<i>Very effective</i>)	33 (31.7)

Table 3

Correlates of Mental Health Service Use in the Preceding 12 Months: Odds Ratios From Logistic Regression Analysis ($N = 188$).

	PCP-MH visit	Psychiatrist visit	Psychol/soc work visit
Age	0.99 [0.96, 1.03]	0.94 [0.88, 1.01]	0.99 [0.94, 1.04]
Gender			
Female (Male)	2.97 [1.35, 6.53]**	0.68 [0.23, 1.96]	1.39 [0.47, 4.14]
Race/ethnicity			
African American	0.57 [0.26, 1.24]	1.20 [0.35, 4.07]	0.20 [0.05, 0.77]*
Hispanic (Non-Hispanic White)	0.78 [0.35, 1.73]	1.63 [0.50, 5.38]	0.49 [0.16, 1.49]
Marital status			
Married/cohabiting (Not married/cohabiting)	0.40 [0.16, 0.98]*	1.57 [0.51, 4.89]	0.95 [0.28, 3.26]
Education			
At least some college (High school or lower)	0.75 [0.39, 1.44]	3.72 [1.10, 12.55]*	1.41 [0.54, 3.71]
No. of ADL/IADL impairments	1.06 [0.92, 1.21]	0.80 [0.63, 1.02]	0.92 [0.75, 1.13]
Private, DVA, and/or Medicare supplemental insurance	1.02 [0.51, 2.07]	2.34 [0.81, 6.78]	1.12 [0.44, 2.88]
HAMD score	0.99 [0.95, 1.03]	1.06 [1.0, 1.13] [†]	0.96 [0.90, 1.03]
-2 log likelihood ratio	239.68 ($df = 9$)	115.93 ($df = 9$)	137.64 ($df = 9$)

Note. 95% confidence interval in square brackets.

[†] $p = .59$.

* $p < .05$.

** $p < .01$.