

Self-reported antidepressant use among depressed, low-income homebound older adults: class, type, correlates, and perceived effectiveness

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Abstract

Little research has been done on the use of antidepressants among homebound older adults, especially low-income homebound older adults, and their perceptions of the effectiveness of their medication. The purposes of this study were to examine self-reported use of antidepressants among depressed homebound older adults, class and type of antidepressants used, individual-level correlates of antidepressant use, and users' perceptions of the effectiveness of antidepressants. Data on self-reported use of antidepressants were obtained as part of a feasibility study of short-term telehealth problem-solving therapy for depressed low-income homebound adults ($n = 162$) aged 50 or older. The 24-item Hamilton Rating Scale for Depression (HAMD) was used to assess depression severity. The findings show that about half of the study participants were taking antidepressants, with 26.6% of those on antidepressants rating their medications very effective and 21.5% rating them effective. Female gender was positively, but older age and being Black/African American were negatively associated with the likelihood of antidepressant use. Perceived effectiveness of antidepressants was negatively associated with older age and the HAMD score. The findings suggest that personalized approaches to depression management may be needed in subgroups of depressed older adults, including culturally tailored medication counseling in Black/African-American older adults.

Introduction

Homebound older adults are more likely than their mobility-unimpaired peers to suffer from depression. One study found that 13.5% of 539 of a visiting nurse agency's homecare clients, aged 65 or older, were diagnosed with major depressive disorder (MDD), a rate twice as high as was found in those receiving ambulatory care; it also found that 71% of those who were depressed were experiencing their first episode of depression (Bruce et al. 2002). Other studies found 10–12% rates of clinically significant depressive symptoms—

a score of 10 or higher on the Patient Health Questionnaire-9 (PHQ-9)—among homebound older adults (Ell et al. 2005; Sirey et al. 2008). When younger age groups (50–64) of homebound adults were included, 17.5% had clinically significant depressive symptoms (PHQ-9 ≥ 10), and 8.8% had probable MDD (Choi et al. 2010).

Older adults with greater medical burden and functional impairment are more vulnerable to depression, and depression can lead to further exacerbation of physical, functional, and mental health problems (Charlson and Peterson 2002; Taylor et al. 2004; Alexopoulos 2005; Covinsky et al. 2010;

Pinquart and Duberstein 2010; Celano and Huffman 2011). Higher rates of depression in homebound older adults than in their ambulatory age peers are likely to stem from stresses associated with their chronic illnesses and disability. Among low-income homebound older adults, financial worries and social isolation created by their homebound state as well as by the stresses that arise from managing chronic illnesses were found to increase their vulnerability to depression (Choi and McDougall 2007). For a large proportion of low-income, depressed, homebound older adults, their depression may also be a continuation of poor mental health that they have experienced for many years, associated with long-term economic adversities, poor physical health, and family/relationship conflicts (Rush *et al.* 2005; Qiu *et al.* 2010). Despite their suffering from depression, low-income, depressed, homebound older adults face significant barriers to accessing treatment in general and psychotherapy in particular, due to their homebound state and lack of financial resources (Choi and McDougall 2007; Qiu *et al.* 2010). The most common depression treatment for them tends to be antidepressant medication prescribed by their primary care or family physician (PCP) (Crystal *et al.* 2003; Weissman *et al.* 2011). Previous studies also found that PCPs did not routinely refer older patients to a psychiatrist or psychotherapist, that they were skeptical about the effectiveness of psychotherapy, that they took responsibility for diagnosing and treating depression in their older patients mostly with selective serotonin reuptake inhibitors (SSRIs) as first-line agents, and that they reported their confidence in prescribing antidepressants as high or very high (Gallo *et al.* 1999; Fischer *et al.* 2003; Wang *et al.* 2006). However, there is a paucity of research on the class and type of antidepressants that depressed homebound older adults, especially those with low income, are taking and on their perceptions of the effectiveness of their medication. The purposes of this study were to examine (1) the class and type of antidepressants that low-income, depressed, homebound older adults reported that they were taking; (2) the individual-level correlates of antidepressant use versus nonuse; and (3) these older adults' perceptions about the effectiveness of antidepressants that they reported they had been taking.

Conceptual Framework and Study Hypothesis

The Andersen-Newman behavioral model of health services use (Andersen 1995) provides the conceptual formulation for understanding homebound older adults' antidepressant intake. This 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. Among *predisposing factors* are demographic characteristics (age and sex, which represent differences in

biology and in values and beliefs about illnesses and acceptable courses of treatment); social structure (a broad array of factors, such as race/ethnicity and occupation, that determine the status of a person in the community and his/her ability and resources to cope with presenting problems); and health beliefs (attitudes, values, and knowledge, culturally determined or otherwise, that people have about health and health services). *Enabling factors* are at both personal (means/resources and know-how to access services that may be determined by education, income, health insurance, and social support) and community (healthcare provider and facility) levels. *Need factors* refer to the most immediate reason(s) the services are needed: the illness- and/or impairment-related conditions, perceived and/or evaluated, for which the services are sought.

In the present study, we examined the influence of sex, age, and race/ethnicity as predisposing factors. Sex is likely to play a role in antidepressant use, as older men are less likely than their female counterparts to admit their depression and seek treatment (Hinton *et al.* 2006). With regard to age and racial/ethnic difference, based on data from older Medicare beneficiaries with a diagnosis of depression, Crystal *et al.* (2003) found that those aged 75 or older and of "Hispanic and other ethnicity" were significantly less likely than those aged 65–69 and non-Hispanic Whites to receive either antidepressants or psychotherapy. Weissman *et al.* (2011) also found that, controlling for depression, Black homecare older adults (aged 65 or older) were less likely than White homecare older adults to use any antidepressant. One study (Cooper *et al.* 2003) found that Black and Hispanic adults of mixed age groups had lower odds than White adults of the same age groups finding antidepressant medications acceptable, while others did not find any racial/ethnic difference in older adults' preference for depression treatment modality (Landreville *et al.* 2001; Gum *et al.* 2006; Choi and Morrow–Howell 2007).

As for enabling factors, in addition to the level of education, income, private or veterans insurance or medical assistance program (MAP) coverage, and family support, we examined the question of whether the level of older adults' disability were associated with their use of antidepressant medication. Low-income homebound older adults are unlikely to seek and use treatment for their depression when managing their more-pressing disability and chronic medical conditions as well as paying for and taking medication for these conditions (Proctor *et al.* 2008). Having to take multiple medications for multiple medical problems may also raise their concerns about medication-interaction effects (Choi and Morrow–Howell 2007).

The primary need factor was the level of depressive symptoms. In addition, we examined the intake of anti-anxiety and prescription pain medications as need factors, given that anxiety and pain may significantly increase depressive symptoms (Karp and Reynolds 2009; Lenze *et al.* 2001).

These were the study hypotheses regarding antidepressant use: among low-income, depressed, homebound older adults, the likelihood of taking antidepressants would be (H1a) negatively associated with male gender, older age, and Black/African American and Hispanic race/ethnicity; (H1b) positively associated with a higher level of education, income, and family support, and with private or veterans (VA) insurance or MAP coverage; (H1c) negatively associated with a higher level of disability; and (H1d) positively associated with a higher level of depressive symptoms, antianxiety medication use, and pain medication use.

Our literature search did not find any previous study that examined depressed patients' self-reported perception of effectiveness of antidepressants. Measuring patients' perceptions of effectiveness is inherently difficult, as those with poor treatment response to pharmacotherapy tend to have a higher incidence of noncompliance and treatment termination (Martin *et al.* 2009). Because of the absence of any previous research on patients' perception of effectiveness and also because of the small number of antidepressant users who provided data on perceived effectiveness, we posited an exploratory hypothesis that the users' perception of effectiveness would be negatively associated with male gender, older age, Black/African American and Hispanic race/ethnicity, and a higher level of depressive symptoms.

Materials and Methods

Participants

The sample consisted of homebound adults, aged 50 or older, who participated in a study that examined the feasibility of short-term, telehealth (videoconferencing) problem-solving therapy. Consistent with the Medicare eligibility criteria for receipt of home health services (Medicare Home Health Independence 2005), homebound older adults are defined in this study as those who, due to medical conditions and/or mobility-affecting impairments, cannot freely leave their home and require help in doing so.

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 scored 5 or higher on the PHQ-9 or who showed other signs of depression. Referred individuals were administered the 24-item HAMD and *DSM-IV* diagnostic interviews for depression. Those whose HAMD scores were 10 or higher were included in the parent study. The exclusion criteria were (1) high suicide risk; (2) dementia (assessed with the Mini-Cog [Borson *et al.* 2000]); (3) bipolar disorder; (4) 12-month or lifetime psychotic symptoms or disorder; (5) presence of co-occurring alcohol or other addictive substance abuse; and (6) current involvement in psychotherapy. Of the 203 older adults who were referred and assessed for eligibility, 165 met the inclusion criteria but three refused

to participate in the study and did not proceed to baseline assessment. As a result, 162 who provided data on their pharmacotherapy at baseline were included in this analysis. The study was approved by the Institutional Review Board of the University of Texas at Austin.

Measures

Antidepressant medication use, class, type

The names and doses of antidepressants that participants reported they had been taking during the preceding 2 months were collected from the original medication containers and/or participant-provided lists of all medications taken. These lists had been compiled by participants' family members, visiting nurses, case managers, PCPs, or as part of their hospital/emergency department discharge summary. The start date of each medication was also obtained from the medication container, the medication list, and/or the individual's oral report. The project's geriatric psychiatrist member [MEK] reviewed each medication to see whether the dose were therapeutic. This review process excluded low-dose uses of tricyclic (*i.e.*, 10 mg of amitriptyline; $n = 4$) and atypical (*i.e.*, 25–50 mg of trazodone; $n = 2$) antidepressants.

Predisposing factors

Age was grouped into 50–59 years (reference category), 60–69 years, and 70 years or older. Sex was female (=1) versus male (=0), and race/ethnicity was non-Hispanic White (reference category), Black/African American, and Hispanic.

Enabling factors

Dichotomous categories were used to measure the level of education (\leq high school vs. \geq some college) and family income (\leq \$15,000 vs. $>$ \$15,000). The category, private or veterans health insurance or MAP, referred to any type of employer-provided, privately purchased, or VA health insurance or MAP for low-income older or disabled adults that provides subsidy for medication expenses. Family support was measured by the 6-item family support scale of the Lubben Social Network Scale Expanded (LSNS-E) (Lubben and Gironde 2000), which has been frequently used to measure the size of older adults' social support networks and their perceived and actual levels of social support from these networks. Cronbach's α for the study sample was .75.

Disability status was measured using the short form (12-item) World Health Organization Disability Assessment Schedule-II (WHODAS-II [Disability Assessment Schedule 2000]), which assesses the activity limitations and participation restrictions experienced by an individual. It does not ask respondents to identify whether the problem was caused by medical or mental health conditions. In consideration of the homebound state of the subjects, the last item, "Your day to

day work,” was reworded to “Your day to day work in and around the house.”

Need factors

Depressive symptoms were measured with the 24-item HAMD. It consists of the GRID-HAMD-21 Structured Interview Guide (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). Antianxiety medication and pain medication data were collected from the original medication containers and/or the individual’s list of all medications being taken.

Perceived effectiveness of antidepressants

Those taking any antidepressant medication were asked to rate their perception of the effectiveness of each medication on a 5-point scale (1 = not effective; 2 = a little effective; 3 = somewhat effective; 4 = effective; 5 = very effective).

Statistical Methods

Following univariate analysis of the participants’ characteristics, including those of predisposing, enabling, and need factors, we described the subjects’ antidepressant use by medication class, type, duration of intake, and perceived effectiveness. Then, we used binary logistic regression analysis to test the study hypotheses regarding self-reported antidepressant use versus nonuse. For the subset of participants who used antidepressants and provided data on perceived effectiveness ($n = 65$), we used ordinary least squares (OLS) regression analysis to test the exploratory hypothesis regarding the relationship between the perceived effectiveness and the predisposing factors and the HAMD scores. Bivariate analysis showed that the effectiveness perception was not significantly correlated with any enabling factor and other participant characteristics (e.g., pain frequency and intensity).

Results

Participant characteristics

Table 1 shows that 56.2% of the participants were Black/African American or Hispanic and 69.8% had family income less than or equal to \$15,000. The mean WHODAS-II score, 35.84 ± 9.03 , indicates a high level of disability. The mean HAMD score was 23.56 ± 7.72 , and 63.6% had MDD. Nearly half (48.8%) of the participants reported that they were taking at least one antidepressant medication. A majority (86.4%) reported that they were experiencing chronic pain, with the mean self-reported frequency of 8.66 ± 2.09 and the mean self-reported intensity of 7.69 ± 2.20 on a 10-point scale; 33.3% and 56% reported that they were taking antianxiety and prescription pain medications, respectively.

Table 1. Participant characteristics ($N = 162$).

Sex, n (%) male	38 (23.5)
Female	124 (76.5)
Age (year) mean \pm SD	65.10 \pm 9.57
Range	50–89
Age group, n (%)	
50–59	53 (32.7)
60–69	61 (37.7)
70–79	32 (19.8)
80+	16 (9.9)
Race/ethnicity, n (%)	
Non-Hispanic White	71 (43.8)
Blacks/African American	54 (33.3)
Hispanic	37 (22.8)
Education, n (%)	
<High school	14 (8.6)
Some high school	23 (14.2)
GED or high school graduate	31 (19.1)
Some college	59 (36.4)
2–4 year college graduate	22 (13.6)
Graduate school attendance or completion	13 (8.0)
Family income, n (%)	
\leq \$15,000	113 (69.8)
$>$ \$15,000	49 (30.2)
Family support (LSNS-E) ¹	
Mean \pm SD	15.77 \pm 6.20
Median	17
Range	0–28
Health insurance, n (%)	
Medicare	129 (79.6)
Medicaid	51 (31.5)
Private/VA insurance or MAP	67 (41.4)
No insurance	4 (2.5)
Disability score (WHODAS-II) ²	
Mean \pm SD	35.84 \pm 9.03
Median	36
Range	13–56
24-item HAMD score	
Mean \pm SD	23.56 \pm 7.72
Median	22.5
Range	10–42
Depression diagnosis, n (%)	
Major depressive disorder	103 (63.6)
Depressive disorder-NOS	53 (32.7)
Dysthymic disorder	6 (3.7)
Antidepressant medication currently taking, n (%)	
Yes, have been taking	79 (48.8)
No, have not been taking	83 (51.2)
Antianxiety medication, currently taking, n (%)	
Yes, have been taking	58 (35.8)
No, have not been taking	104 (64.2)
Antidepressant/antianxiety medications, n (%)	
Neither	64 (39.5)
Antidepressant only	40 (24.7)
Antianxiety only	19 (11.7)
Both antidepressant and antianxiety	39 (24.1)
Chronic physical pain during the past 3 months, n (%)	
Yes, have had pain	140 (86.4)
No, have not had pain	22 (13.6)

Table 1. *Continue*

Frequency of chronic pain ($n = 140$, n [%]) ³	
Mean \pm SD	8.66 \pm 2.09
Median	10
Intensity of chronic pain ($n = 140$, n [%]) ⁴	
Mean \pm SD	7.69 \pm 2.20
Median	10
Prescription pain medication currently taking, n (%)	
Yes, have been taking	
No, have not been taking	

¹Lubben Social Network Scale-Expanded family scale: scores of 0 and 30 represent no family support and full family support, respectively.

²World Health Organization Disability Assessment Schedule-II: scores of 12 and 60 represent no disability and extremely severe disability, respectively.

³Measured on a 10-point scale (1 = once a week or less often; 10 = all the time).

⁴Measured on a 10-point scale (1 = minimal; 10 = extreme).

The high rates of chronic pain experience and pain medication use among these depressed older adults are notable. Further analysis (not shown in Table 1) found no significant difference in HAMD scores by sex, age, race/ethnicity, education, income, and family support; by presence or absence, frequency, and intensity of chronic pain; or by antidepressant, antianxiety, and pain medication intake status.

Self-reported antidepressant use and perceived effectiveness

Table 2 shows that of the 79 participants who reported that they were taking antidepressants, only 7.6% ($n = 6$) were taking two medications. Of those taking one antidepressant, 65.8% ($n = 48$) were taking an SSRI, 31.5% ($n = 23$) were taking a serotonin-norepinephrine reuptake inhibitor (SNRI), and 2.7% ($n = 2$) were taking an atypical antidepressant (bupropion [Wellbutrin]). Of the SSRIs, citalopram (Celaxa) and sertraline (Zoloft) were most frequently taken, and of the SNRIs, duloxetine (Cymbalta) was the most frequently taken. Of the participants who provided data on the duration of their antidepressant intake, the median duration was 2.01 years. Further analysis found that all six participants who reported that they had been taking two antidepressants were aged 60–69 and had at least some college education; five were women; four were non-Hispanic White and two were Hispanic; and five had annual income less than or equal to \$15,000. They also had significantly higher HAMD scores than those taking just one antidepressant (31.0 ± 5.72 vs. 22.86 ± 7.21 , $P = 0.009$), but did not differ in their disability score.

Table 2 also shows that 48.1% of the self-reported antidepressant users rated their medications as very effective or effective and that 26.6% rated them as somewhat effective. Fourteen participants, or 17.7%, stated that either (1)

Table 2 Antidepressant class, types, duration of intake, and perceived effectiveness ($N = 79$).

No. of antidepressant medication currently taking, n (%)	
One	73 (92.4)
Two	6 (7.6)
Those taking one antidepressant, n	
Selective serotonin reuptake inhibitors (SSRIs)	
Citalopram	14
Escitalopram	9
Fluoxetine	5
Paroxetine	3
Sertraline	17
Serotonin-norepinephrine reuptake inhibitors (SNRIs)	
Duloxetine	13
Mirtazapine	2
Venlafaxine	8
Atypical	
Bupropion	2
Those taking two antidepressants, n	
Citalopram + duloxetine	1
Citalopram + bupropion	2
Fluoxetine + duloxetine	1
Fluoxetine + venlafaxine	1
Mirtazapine + bupropion	1
Duration of antidepressant intake ($n = 66$; year) ¹	
Mean	3.69 \pm 4.83
Median	2.01
Range	0.2–25.14
Perceived effectiveness of antidepressants, n (%)	
Very effective	21 (26.6)
Effective	17 (21.5)
Somewhat effective	21 (26.6)
A little effective	5 (6.3)
Not effective	1 (1.3)
Do not yet know/cannot tell without getting off	14 (17.7)

¹Thirteen subjects could not recall when they had begun taking antidepressants.

they did not yet know whether their medications were effective because they had been taking them for a short time (2–3 months) or (2) they were unable to tell without getting off the medication because they had been taking it for a long time. Data on participants' history of pharmacotherapy were not systematically collected, but a few participants who had not been taking antidepressants in the preceding 2 months volunteered that they had stopped taking medication because of no perceived benefits and/or side effects, and one participant volunteered that she had not filled the prescription.

Correlates of antidepressant use and perceived effectiveness

Table 3 shows that antidepressant use was significantly associated with all three predisposing factors. Being female was positively associated with antidepressant use. However, being aged 70 or older, as opposed to aged 50–59, and being Black/African American, as opposed to non-Hispanic White, were negatively associated with antidepressant use. Of enabling factors, low income (i.e., \leq \$15,000) was negatively

Table 3. Correlates of antidepressant intake: binary logistic regression results ($N = 162$).

Variable	B (SE)	Odds ratio (95% CI)
Sex		
Female (Male)	1.10 (0.50)*	3.0 (1.12–8.05)
Age group		
(50–59)		
60–69	–0.56 (0.49)	0.57 (0.22–1.48)
70+	–1.61 (0.55)**	0.20 (0.07–0.59)
Race/ethnicity		
(Non-Hispanic White)		
Black/African American	–1.85 (0.49)***	0.16 (0.06–0.41)
Hispanic	–0.36 (0.49)	0.70 (0.27–1.81)
Education		
High school or lower (at least some college)	0.37 (0.42)	1.45 (0.63–3.33)
Income		
≤\$15,000 (>\$15,000)	–0.10 (0.45)*	0.37 (0.15–0.92)
Private/veterans insurance or MAP		
Yes (No)	0.55 (0.41)	1.72 (0.77–3.87)
Family support score	0.02 (0.03)	0.98 (0.92–1.05)
Disability score (WHODAS-II)	0.01 (0.03)	1.01 (0.96–1.06)
24-item HAMD score	–0.02 (0.03)	0.98 (0.93–1.03)
Antianxiety medication		
Yes (No)	1.28 (0.41)**	3.59 (1.60–8.07)
Prescription pain medication		
Yes (No)	0.53 (0.41)	1.70 (0.76–3.80)
Cox & Snell R^2	0.27	
Nagelkerke R^2	0.37	
–2 log-likelihood model χ^2 (df, P)	172.72 (13; $P < 0.001$)	

*** $P < 0.001$; ** $P < 0.01$; * $P < 0.05$.

associated with antidepressant use, but the level of education, private/veterans insurance or MAP coverage, family support, and disability score were not significant factors. Of need factors, the HAMD score and pain medication intake were not significantly associated with antidepressant use but antianxiety medication intake was a significant factor.

The OLS regression results (not shown in Table 3) found that the perceived effectiveness of antidepressants was negatively associated with being aged 70 or older ($\beta = -0.321$, $t = -2.210$, $P = 0.031$) and the HAMD score ($\beta = -0.299$, $t = -2.320$, $P = 0.024$). Sex and race/ethnicity were not significant correlates. However, caution is required in interpreting the results, given the small sample size.

Discussion

The study found that about half of the low-income, depressed, homebound older-adult participants were taking antidepressant medications. All predisposing factors (sex,

age, and race/ethnicity) were significantly associated with the likelihood of antidepressant use, supporting H1a. Of the enabling factors, only income was a significant correlate. Of the need factors, severity of current depressive symptoms was not significantly associated with antidepressant intake, partly because the study included only depressed participants. The cross-sectional data did not allow us to examine the severity of depressive symptoms prior to antidepressant use either. However, the finding that self-reported use of antianxiety medication was positively associated with self-reported antidepressant use suggests the importance of comorbid anxiety and depression and associated symptom severity as a need factor. Thus, the logistic regression results did not support H1c and only partially supported H1b and H1d. The hypothesis regarding the factors associated with the participants' perception of effectiveness of antidepressants was also partially supported as it was negatively associated with older age (70+) and higher HAMD scores, but it was not significantly associated with gender and race/ethnicity.

The negative relationship between age and antidepressant use appears to suggest an age cohort effect, with those aged 70 or older having a more negative predisposition toward antidepressant use than those aged 50–59. Based on the study's finding that those aged 70 or older were also less likely to perceive their medications to be effective, some individuals in this age group may have stopped taking antidepressants. PCPs may also be reluctant to prescribe antidepressants to older patients, especially those with multiple medical conditions (Bruce *et al.* 2002; Ayalon *et al.* 2010). The finding may also reflect low-income, depressed, homebound older adults' preference for nonpharmacological over pharmacological treatment.

The negative relationship between being Black/African American and using antidepressants confirms the findings of previous research. Studies have found that in general, racial/ethnic minority older adults were less likely than their non-Hispanic White peers to use formal mental health services, but more likely to use traditional self-care regimens and prayer and to turn to their informal support networks and to clergy (Snowden 2001). These racial/ethnic differences in help-seeking behaviors may be due in part to cultural differences in the way a person's symptoms are manifested, defined, interpreted, and labeled and in the person's attitudes, values, and knowledge about negative aspects or perceived barriers (*i.e.*, side effects, expense, inconvenience) of pharmacotherapy (Andersen 1995; Lewis–Fernandez and Diaz 2002). Interestingly, though, our findings show that Hispanic older adults did not differ from their non-Hispanic peers in their likelihood of taking antidepressants.

The findings also show that the participants' perception of effectiveness of antidepressants tended to match their depressive symptoms, as those with higher HAMD scores reported lower effectiveness ratings. Although those aged 70 or older also reported lower effectiveness ratings, sex and race/ethnicity were not significant predictors of perceived effectiveness of antidepressants. This suggests that a majority of the current users, regardless of sex and race/ethnicity, perceive the medication as being at least somewhat effective. However, as those who had been dissatisfied with antidepressant use were likely to have stopped using them, this finding needs to be interpreted with caution.

In many efficacy trials of antidepressants in the treatment of late-life depression, antidepressants were more effective than placebos, and no difference was found in antidepressant class outcomes among older adults with major depression or nonspecific depression severity, although SSRIs may be better tolerated than tricyclics (Roose and Schatzberg 2005; Reynolds *et al.* 2006). However, a meta-analysis of the use of second-generation antidepressants in late life found their effects tend to be modest (Nelson *et al.* 2008). A previous

study also suggested that older adults with the greatest comorbidity may be at high risk for poor depression treatment outcomes (Kales and Valenstein 2005), while another study found that antidepressants are effective in depressed patients with a range of comorbid physical conditions (Sheikh *et al.* 2004).

Despite the generally positive perception of effectiveness of antidepressants among the study participants who had been taking the medications for at least 8 weeks (and some for a much longer period), the continuing depression—either nonremitted or in partial remission—of all of them suggests that their care may not have been well monitored by the prescribing clinician. This finding is consistent with those of previous research, namely, that depression among homebound older adults is not treated well although it is more likely to be identified and treated than it once was (Bruce *et al.* 2002; Ayalon *et al.* 2010).

This study has several limitations. First, the sample size is relatively small. Second, despite the participants' self-reports that they were taking the medications, actual medication adherence was not known. Third, lack of data on a medication reconciliation with prescribers is also a limitation. Fourth, we did not systematically collect data from those who were not taking antidepressants to learn whether they had been offered or had stopped taking them and why. Future research is needed to examine the relationship between patients' perception of effectiveness and medication adherence. Despite these limitations, the present study provides insights into these older adults' perceptions of the effectiveness of antidepressants.

Conclusion

The findings of this study suggest that tailored approaches to depression management may be necessary in homebound older adults, especially older men, those aged 70 or older, and racial/ethnic minorities. Those who suffer from depression but do not take antidepressants may be better encouraged to take them if they receive more individualized attention from a clinic staff member or a care manager who can check on them to discuss their depression care. In addition, there may be a need for culturally tailored medication counseling of Black/African-American older adults to improve their uptake rate. Although predisposing factors were significantly associated with self-reported antidepressant use, it appears that they were not significantly associated with perceived effectiveness of antidepressants. Given low-income, depressed, homebound older adults' multiple physical, functional, and mental health problems, future research also needs to examine if these older adults may want to combine antidepressant treatment with psychotherapeutic and/or case management approaches.

Conflict of Interest

No conflicts of interest exist for any of the authors.

References

- Alexopoulos, G. S. 2005. Depression in the elderly. *Lancet* 365:1961–1970.
- Andersen, R. M. 1995. Revisiting the behavioral model and access to medical care: does it matter? *J. Health Soc. Behav.* 36: 1–10.
- Ayalon, L., D. Fialová, P. Areán, and G. Onder. 2010. Challenges associated with the recognition and treatment of depression in older recipients of home care services. *Int. Psychogeriatr.* 22:514–522.
- Borson, S., J. Scanlan, M. Brush, P. Vitaliano, and A. Dokmak. 2000. The Mini-Cog: a cognitive “vital signs” measure for dementia screening in multi-lingual elderly. *Int. J. Geriatr. Psychiatry* 25:1021–1027.
- Bruce, M. L., G. J. McVay, P. J. Raue, E. L. Brown, B. S. Meyers, D. J. Keohane, and D. R. Jagoda. 2002. Major depression in elderly home health care patients. *Am. J. Psychiatry* 159:1367–1374.
- Celano, C. M., and J. C. Huffman. 2011. Depression and cardiac disease: a review. *Cardiol. Rev.* 19:130–142. doi: 10.1097/CRD.0b013e31820e8106
- Charlson, M., and J. C. Peterson. 2002. Medical comorbidity and late life depression: what is known and what are unmet needs? *Biol. Psychiatry* 52:226–235.
- Choi, N. G., and McDougall G. 2007. Comparison of depressive symptoms between homebound older adults and ambulatory older adults. *Aging Ment. Health* 11:310–322.
- Choi, N. G., and Morrow-Howell N. 2007. Older adults’ attitudes toward depression treatment: within-group differences. *Aging Ment. Health* 11:422–433.
- Choi, N. G., M. Teeters, L. Perez, B. Farar, and D. Thompson. 2010. Severity and correlates of depressive symptoms among recipients of Meals in Wheels: age, gender, and racial/ethnic difference. *Aging Ment. Health* 14:145–154.
- Cooper, L. A., J. J. Gonzales, J. J. Gallo, K. M. Rost, L. S. Meredith, L. V. Rubenstein, N. Y. Wang, et al. 2003. The acceptability of treatment for depression among African-American, Hispanic, and White primary care patients. *Med. Care* 41:479–489.
- Covinsky, K. E., K. Yaffe, K. Lindquist, E. Cherkasova, E. Yelin, and D. G. Blazer. 2010. Depressive symptoms in middle age and the development of later-life functional limitations: the long-term effect of depressive symptoms. *J. Am. Geriatr. Soc.* 58:551–556.
- Crystal, S., U. Sambamoorthi, J. T. Walkup, and A. Akincigil. 2003. Diagnosis and treatment of depression in the elderly Medicare population: predictors, disparities, and trends. *J. Am. Geriatr. Soc.* 51:1718–1728.
- Disability Assessment Schedule: WHODAS-II. 2000. World Health Organization, Geneva, Switzerland.
- Ell, K., J. Unützer, M. Aranda, K. Sanchez, and P.-J. Lee. 2005. Routine PHQ-9 depression screening in home health care: depression prevalence, clinical and treatment characteristics, and screening implementation. *Home Health Care Serv. Q.* 24:1–19.
- Fischer, L. R., F. Wei, L. I. Solberg, W. A. Rush, and R. L. Heinrich. 2003. Treatment of elderly and other older adults for depression in primary care. *J. Am. Geriatr. Soc.* 51: 1554–1562.
- Gallo, J. J., S. D. Ryan, and D. E. Ford. 1999. Attitudes, knowledge, and behavior of family physicians regarding depression in late life. *Arch. Fam. Med.* 8:249–256.
- GRID-HAMD-17, GRID-HAMD-21 Structured Interview Guide. 2003. Depression Rating Scale Standardization Team. International Society for CNS Drug Development, San Diego, CA.
- Gum, A. M., P. A. Areán, E. Hunkeler, L. Tang, W. Katon, P. Hitchcock, D. C. Steffens, et al. 2006. Depression treatment preferences in older primary care patients. *Gerontologist* 46:14–22.
- Hinton, L., M. Zweifach, S. Oishi, L. Tang, and J. Unützer. 2006. Gender disparities in the treatment of late-life depression: qualitative and quantitative findings from the IMPACT trial. *Am. J. Geriatr. Psychiatry* 14:884–892.
- Kales, H. C., and M. Valenstein. 2005. Complexity in late-life depression: impact of confounding factors on diagnosis, treatment, and outcomes. *J. Geriatr. Psych. Neurol.* 15:147–155.
- Karp, J. F., and C. F. Reynolds. 2009. Depression, pain, and aging. *Focus* 7:17–27.
- Landreville, P., J. Landry, L. Baillargeon, A. Guerette, and E. Matteau. 2001. Older adults’ acceptance of psychological and pharmacological treatments for depression. *J. Gerontol.* 50B:P285–P291.
- Lenze, E. J., B. H. Mulsant, M. K. Shear, G. S. Alexopoulos, E. Frank, and C. F. Reynolds. 2001. Comorbidity of depression and anxiety disorders in late life. *Brain Behav.* 14:86–93.
- Lewis-Fernandez R., and N. Diaz. 2002. The cultural formulation: a method for assessing cultural factors affecting the clinical encounter. *Psychiat. Q.* 73:271–295.
- Lubben, J. E., and M. W. Gironda. 2000. Social support networks. Pp. 127–137 in D. Osterweil, B.-K. Smith, and J. C. Beck, eds. *Comprehensive geriatric assessment*. McGraw-Hill, New York.
- Martin, M. J., A. Pareja, I. Aquirre, J. Salva, and M. Roca, J. Garcia-Toro, F. Campoamor, A. Pareja, I. Aquirre, J. Salva, and M. Roca. 2009. Use of antidepressant treatment: patients’ perception. *Actas. Esp. Psiquiatr.* 27:276–281.
- Medicare Home Health Independence: Receiving Medicare home health care doesn’t mean you have to be shut-in! 2005. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services (online). Available at www.cms.hhs.gov/DemoProjectsEvalRpts/downloads/MMA702-BeneficiaryBrochure.p.pdf. Accessed August 14, 2008.

- Moberg, P. J., L. W. Lazarus, R. I. Mesholam, W. Bilker, I. L. Chuy, I. Neyman, and V. Markvart. 2001. Comparison of the standard and structured interview guide for the Hamilton Depression Rating Scale in depressed geriatric inpatients. *Am. J. Geriatr. Psychiatry* 9:35–40.
- Nelson, J. C., K. Delucchi, and L. S. Schneider. 2008. Efficacy of second generation antidepressants in late-life depression: a meta analysis of the evidence. *Am. J. Geriatr. Psychiatry* 16:558–567.
- Pinquart, M., and P. R. Duberstein. 2010. Depression and cancer mortality: a meta-analysis. *Psychol. Med.* 40:1797–1810.
- Proctor, E. K., L. Hasche, N. Morrow-Howell, M. Shumway, and G. Snell. 2008. Perceptions about competing psychosocial problems and treatment priorities among older adults with depression. *Psychiatr. Serv.* 59:670–675.
- Qiu, W. Q., M. Dean, T. Liu, L. George, M. Gann, J. Cohen, and M. L. Bruce. 2010. Physical and mental health of homebound older adults: an overlooked population. *J. Am. Geriatr. Soc.* 58:2423–2428.
- Reynolds, C. F., M. A. Dew, B. G. Pollock, B. H. Mulsant, E. Frank, M. D. Miller, P. R. Houck, et al. 2006. Maintenance treatment of major depression in old age. *N. Engl. J. Med.* 354:1130–1138.
- Roose, S. P., and A. F. Schatzberg. 2005. The efficacy of antidepressants in the treatment of late-life depression. *J. Clin. Psychopharm.* 25:S1–S7.
- Rush, A. J., M. Zimmerman, S. R. Wisniewski, M. Fava, S. D. Hollon, D. Warden, M. M. Biggs, et al. 2005. Comorbid psychiatric disorders in depressed outpatients: demographic and clinical features. *J. Affect. Disord.* 87:43–55.
- Sheikh, J. I., E. L. Cassidy, P. M. Doraiswamy, R. M. Salomon, M. Hornig, P. J. Holland, F. S. Mandel. 2004. Efficacy, safety, and tolerability of sertraline in patients with late-life depression and comorbid medical illness. *J. Am. Geriatr. Soc.* 52:86–92.
- Sirey, J. A., M. L. Bruce, M. Carpenter, D. Booker, M. C. Reid, K. A. Newell, and G. S. Alexopoulos. 2008. Depressive symptoms and suicidal ideation among older adults receiving home-delivered meals. *Int. J. Geriatr. Psychiatry* 23:1306–1311.
- Snowden, L. R. 2001. Barriers to effective mental health services for African Americans. *Ment. Health Serv. Res.* 3:181–187.
- Taylor, W. D., D. R. McQuoid, and K. R. R. Krishnan. 2004. Medical comorbidity in late-life depression. *Int. J. Geriatr. Psychiatry* 19:935–943.
- Wang, P. S., O. Demler, M. Olfson, H. A. Pincus, K. B. Wells, and R. C. Kessler. 2006. Changing profiles of service sectors used for mental health care in the United States. *Am. J. Psychiatry* 163:1187–1198.
- Weissman, J., B. S. Meyers, S. Ghosh, and M. L. Bruce. 2011. Demographic, clinical, and functional factors associated with antidepressant use in the home healthcare elderly. *Am. J. Geriatr. Psychiatry* 19:1042–1045.