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Demographic, Clinical, and Functional Factors Associated With Antidepressant Use in the Home Healthcare Elderly

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Abstract

Objectives—Determine rates and demographic, clinical, and functional correlates of antidepressants (ADs) in home healthcare patients.

Methods—Year 2007 cross-sectional National Home Health and Hospice Care Survey (N = 3,226) of patients 65 years or older (mean 80.11, confidence interval [CI] = *79.65–80.57).*

Results—Overall 33.50% used ADs. Among the 6.76% with depression, 70.84% used ADs compared with 29.15% who used ADs without a documented depression diagnosis. In a regression, controlling for depression, blacks used less ADs than whites (odds ratio [OR] = *0.41, CI = 0.24–0.70). Younger age (OR = 0.96, CI* = 0.94–0.98), activities of daily living impairments (OR = *1.15, CI = 1.05–1.26), benzodiazepines (OR = 2.63, CI = 1.88–3.69), antipsychotics (OR = 2.08, CI = 1.29–3.36), and nonpsychotropics (OR = 1.07, CI = 1.04–1.10) were related to AD use.*

Conclusion—Among home healthcare patients, more than one-third took ADs including patients without depression. Blacks used fewer ADs than whites. Increased use was associated with younger age, disability, and nonpsychotropics.

Keywords

Antidepressant; elderly; home health-care

Home healthcare (HHC) is primarily interim care for homebound postacute ill or injured patients. Because care is provided in the home, HHC offers the opportunity to identify the unmet patient needs before transitioning to the next stage of care. HHC nurses provide, on average, 22 visits to the patient's home. The Medicare requirement that HHC nurses assess the mental status of new admissions, and every 60 days thereafter during HHC, provides a setting for intervening to improve depression detection and management.

A decade ago, research found high rates of depression among HHC patients but low rates of antidepressant (AD) use. Since that time, rates of AD use have increased greatly among older adults generally.[1,2] We do not know, however, the extent to which such changes applied to the most medically compromised and disabled older adults, such as HHC patients, or if they are equally distributed across sociodemographic groups. Among Medicare patients generally, African Americans received disproportionately fewer ADs than whites even when diagnosed as depressed, and African Americans and Latinos received less good mental healthcare compared with whites.[3–5]

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This study used data from the 2007 National Home and Hospice Care Survey (NHHCS) to estimate rates of AD use in HHC patients and identify demographic, functional, and clinical factors associated with AD use in this vulnerable patient population.

METHODS

Sample and Measures

The NHHCS sampled HHC patients who were scheduled for assessment interviews. Patient data were collected through agency interviews and medical records. Our sample included HHC patients aged 65 years or older; receiving Medicare postacute care for medical and surgical reasons. We excluded hospice patients because of their different medical and service needs.[6]

We classified medications as psychotropic if approved for psychiatric disorders treatment. ADs included selective serotonin reuptake inhibitor, serotonin-norepinephrine reuptake inhibitor, tricyclic antidepressant, and “Others,” which included bupropion, mirtazapine.

We classified psychotropic medications besides ADs into antipsychotics, including phenothiazene antipsychotics, atypical antipsychotics, and miscellaneous antipsychotics; mood stabilizers including lithium, valproate, lamotrigine, and carbamazepine; and other psychotropic medications (*other psychotropics*) including benzodiazepines, miscellaneous anxiolytics, sedatives, and hypnotics.

The NHHCS reported International Classification of Disease, 9th Revision, diagnoses (1 primary and up to 15 secondary) per patient. Diagnoses were included as part of the physician referral. Among bipolar patients, only patients who had a depression episode were included, and were grouped with the depressed. Medical comorbidity was represented by the sum of International Classification of Diseases, Ninth Revision, Clinical Modification categories and functional status was measured as total activities of daily living (ADL) impairments. Sociodemographic factors included age, gender, race, Hispanic ethnicity, marital status (married, divorced, single—never married), and living arrangements (lives alone, lives with spouse, lives with other family members/children/parents, or nonfamily members).

Statistical Analysis

We used a survey data analytic procedure (SAS Institute Inc., Cary, NC), which adjusted for variance estimation using Taylor series. Rao-Scott χ^2 for weighted survey data was used to test categorical variables. Student's *t*-tests were conducted for continuous variables. A multivariate logistic regression with AD use as the dependent variable included factors significantly associated with AD use ($p < 0.10$) in the bivariate analysis.

RESULTS

Sample Characteristics

Analyses included 3,226 patients, representing 1,003,390 national patients. The study population was predominately women (68.37%), average age 80.11 years (range: 65–100, CI = 79.65–80.57). The sample included whites (82.45%), blacks (14.98%), Asians (1.62%), Pacific Islanders, and American Indians (0.95% combined). Hispanic participants were 8.15%. Patients were primarily widowed (46.45%) or married (38.68%). Most patients lived alone (35.09%) or with a spouse (32.00%).

The most common psychiatric diagnoses were depression (6.76%), dementia (4.00%), and anxiety (3.18%). Psychotic disorders comprised the smallest portion of the overall sample

(0.29%), and neither dementia, anxiety nor psychotic disorders were associated with AD use. Total number of psychiatric disorders ranged from 0 to 3 with a mean of 0.14 (CI = 0.12–0.17). Number of nonpsychiatric conditions ranged from 0 to 9 per patient with a mean of 2.17 (2.09–2.25). Mean number of ADL impairments was 2.85 (CI = 2.76–2.94). Overall, 33.50% of patients used ADs and 3.40% were taking more than one AD. Among patients taking ADs, the most commonly used was selective serotonin reuptake inhibitors (65.14%), followed by tricyclic antidepressants (14.67%), serotonin-norepinephrine reuptake inhibitors (11.34%), and other ADs (22.41%). The most common group of psychotropic medications, besides ADs, was other psychotropics (30.15%). A small fraction received antipsychotics or mood stabilizers. The total mean number of prescriptions was 10.67 (CI = 10.39–10.96) and total mean number of nonpsychotropic medications was 11.09 (CI = 10.77–11.41) suggesting that patients were taking medications without a reported prescription.

Factors Associated With AD Use

AD use was higher among patients with depression than those without (70.34% versus 28.71%). Sociodemographic factors that were significantly correlated with AD used included black race with white (OR = 0.38, CI = 0.24–0.59) and younger age (t-test = –4.12, df = 1, $p < 0.0001$). Clinical correlates included depression (OR = 5.45, CI = 3.20–9.30), total psychiatric and nonpsychiatric disorders (t-test = 5.83, df = 1, $p < 0.0001$; t-test = 2.43, df = 1, $p = 0.01$, respectively), and number of ADL impairments (t-test = 2.77, df = 1, $p = 0.005$) (mean number ADL impairments; AD users versus non-AD users: 3.03, SE = 0.07 and 2.75, SE = 0.05). AD use was associated with other psychotropic use (3.56, CI = 2.69–4.72). Total number of prescriptions was higher among AD users (AD users 12.92, SE = 0.26 versus non-AD users 9.49, SE = 0.15). Total number of psychotropic medications and nonpsychotropic medications were associated with AD use (t-test = 8.91, df = 1, $p < 0.0001$; t-test = 7.23, df = 1, $p < 0.0001$, respectively).

The multivariate logistic regression found that black race and advanced age remained significantly inversely associated with AD use. Other significant factors included depression, ADL impairments, use of antipsychotrics and other psychotropics, and the total number of nonpsychotropic medications (Table 1).

CONCLUSIONS

The major finding was that more than one-third of geriatric HHC patient used ADs. Use of ADs varied systematically be sociodemographic and clinical factors even after controlling for depression diagnoses. Among the subset with a chart diagnosis of depression, about 70% were taking ADs. In contrast, earlier findings in the geriatric HHC population reported that only 22% of patients who met a research depression diagnosis[1] were receiving an AD. Rates of AD use were also high (28.71%) among patients without a depression diagnosis. Whether the high use of ADs among patients without a depression diagnosis represented the under-reporting of depression, the initiation of ADs for past depressions that were not carried forward or ADs prescribed for subthreshold symptoms or for indications other than depression, cannot be ascertained.

Among sociodemographic factors, the higher use of ADs in whites compared with blacks, after controlling for depression and other clinical factors, may reflect patient preferences, differential access to care, provider differences.[7] This racial difference in AD use may reflect disparities in quality of mental healthcare, although the design cannot assess clinical appropriateness. Regarding age, its inverse relationship between AD use may reflect a tendency not to treat subthreshold depressive symptoms in the older adults.[8]

Among clinical factors, the positive relationship between total medications for nonpsychiatric conditions and AD use, after controlling for depression diagnosis, may reflect AD prescriptions for symptoms related to medical burden (e.g., fatigue, diminished interest) that imitate clinical depression. Alternatively, providers who prescribe ADs may tend to prescribe more medications overall. The association between ADs and benzodiazepines may result from prescriptions written to reduce anxiety or sleep disturbances frequently accompanying depression.

The NHHCS was limited by the reliance on medical records, which may fail to include diagnoses because of transcription errors. Diagnoses may also get lost during patient transitions.[9] As with cross-sectional studies, causation and timing cannot be established. Further investigation in longitudinal data could determine the timing and the circumstances under which a physician writes the prescription.

Our study strength was the examination of the HHC population. HHC provides a window of time in which patients are observed by HHC nurses, and in which the unmet healthcare needs of the HHC patient can be addressed. HHC is also a service used by a broad sample of the national population and represents an opportunity to address disparities in mental healthcare. The use of the newly released NHHCS offered data from a broad population sample of the HHC elderly, necessary to update the national patterns in AD use. These new data indicated that AD use has become highly common in HHC patients, regardless of depression diagnoses, and varied by sociodemographic, clinical, and functional factors. The extent to which AD use in clinically appropriate is a question that needs to be addressed by future research. Its importance is underscored by the sys tematic variation in ADs by sociodemographic and clinical factors, even after controlling for documented depression.

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TABLE 1

Logistic Regression Modeling Any AD as a Dependent Variable and Black Race, Age, Total Number of ADL Impairments, Depression, Other Psychotropics, Antipsychotic Use, and Total Number of Nonpsychotropic Medications as Independent Variables

Independent Variables	OR (CI)	Wald χ^2 (df) (p)[a]
Black race	0.41 (0.24-0.70)	10.26 (1) (0.0014)
Age	0.96 (0.94-0.98)	14.98 (1) (0.0001)
Total ADL impairments	1.15 (1.05-1.26)	10.01 (1) (0.0016)
Depression	4.78 (2.65-8.60)	27.20 (1) (<0.0001)
Other psychotropics use	2.63 (1.88-3.69)	31.85 (1) (<0.0001)
Antipsychotic use	2.08 (1.29-3.36)	9.05 (1) (0.0026)
Total number of nonpsychotropic medications	1.07 (1.04-1.10)	28.64 (1) (<0.0001)

[a]Wald χ^2 test for significance of independent variables in the logistic regression model.