Diagnosed Depression Among Medicare Home Health Patients: National Prevalence Estimates and Key Characteristics

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Objectives: **This study estimated the prevalence of diagnosed depression among elderly Medicare fee-for-service home health patients and identified demographic, functional, and care utilization characteristics associated with the diagnosis.** ***Methods:*** **Data from the 2007 National Home and Hospice Care Survey were analyzed to generate nationally representative estimates. Chi square and Wald tests, corrected for the sampling design, tested for differences in categorical and continuous measures, respectively.** ***Results:*** **Nationally, 6.4% (N=42,192) of the study population received a diagnosis of depression, which was associated with younger age (p=.016), lack of a primary caregiver other than the home care agency (p<.001), a lower likelihood of receiving medical social services (p=.010), and a greater likelihood of using antidepressants (p<.001).** ***Conclusions:*** **The rate of diagnosed depression was higher than the rate found in a previous study but lower than rates in studies that used diagnostic interviews or screening tools. Diagnosed depression was associated with a limited number of patient characteristics. (*Psychiatric Services* 62:538–540, 2011)**

Older patients receiving home health care have substantially higher burden of general medical illness and disability than other elderly persons living in the community (1). The burden of depression is disproportionately high in this vulnerable population. One prospective study of a random sample of 539 elderly home health patients in suburban New York State found prevalence rates of 13.5% for major depression and 10.8% for minor depression (2). However, depression was included in the list of referral diagnoses for only 3% of these patients. Another study found that home health nurses had great difficulty adequately and correctly identifying depression (3). A study of 9,178 elders admitted to home health care programs via primary care referral found a prevalence of 8.5% for probable major depression and 1.6% for mild depression on the basis of nurse screening (4). Little is known about the national prevalence of depression recognized among home health patients.

In this study, we analyzed data from the 2007 National Home and Hospice Care Survey (NHHCS) to estimate the prevalence of diagnosed depression among elderly Medicare fee-for-service home health patients. We also examined key demographic, functional, and care utilization characteristics associated with a depression diagnosis.

Methods

The 2007 NHHCS used a stratified, two-stage probability sample design. In the first stage, providers were stratified by type of agency (home health, hospice, or mixed) and geographic location and randomly selected within strata. In the second stage, up to ten current home health patients or hospice discharges were randomly selected within each agency. Current home health patients were those who were on the rolls of the agency as of midnight of the day immediately before the agency interview. Data were collected through in-person interviews with agency directors or their designated staff members and by review of medical records. The patient health module of the NHHCS had an overall unweighted response rate of 66% (weighted rate=55%) (5).

In this study we focused on current home health patients who were aged 65 or older at the time of the NHHCS interview and who had Medicare fee-for-service (under the episode-based prospective payment system) as the primary payment source for their care; 93% of all elderly Medicare patients in home health care were under this type of payment arrangement in 2007. This sample represents a population with relatively homogeneous clinical needs—that is, the sample

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consisted of patients who were receiving postacute care for medical and surgical reasons. Payment and financial incentives for the agencies were also homogeneous.

For each patient, current diagnoses in the home health records (one primary and up to 15 secondary) were reported. Although the NHHCS did not provide explicit information on the source of these diagnoses, they were mostly diagnoses listed by the referring physician at the patient's admission into home health care. The diagnoses may have been modified by the home health nurse or other agency personnel after admission. In our patient sample, 24% had a current primary diagnosis that was different from the primary diagnosis at admission, which reflected some, albeit limited, update and revision by nurses or others. A current diagnosis of depression either by the referring physician or the agency (referred to as "diagnosed depression" in this report) was defined as the occurrence of at least one of the following *ICD-9-CM* codes in any of the current primary and secondary diagnosis fields: 296.2x, major depression single episode; 296.3x, major depression recurrent episode; 311x, depression not elsewhere classified; and 300.4x, dysthymia, anxiety-depression, or prolonged depressive reaction.

We examined key demographic characteristics (age, gender, race-ethnicity, married or living with a partner, and presence of a caregiver other than the home health agency), functioning (number of activities of daily living the patient needed help with), and health care utilization (whether the patient was institutionalized before admission; the number of skilled nursing and home health aide visits and receipt of any therapy visits and medical social services [for example, education about community resources and support] in the past 60 days or since admission; the number of current medications; and current use of antidepressants).

Descriptive statistics were weighted to reflect probabilities of sample selection and adjust for nonresponse (5). Pearson and Wald tests, correcting for the complex sampling design, were used to test differences in categorical and continuous variables, respectively, between the groups with and without diagnosed depression.

This research was exempted from institutional review board review at the Weill Cornell Medical College.

Results

As shown in Table 1, 6.4% of the study population had a current diagnosis of depression. Depression was the primary diagnosis for only .6% of patients (N=7). The mean age of patients with

Table 1

Characteristics of elderly Medicare fee-for-service patients in the 2007 National Home and Hospice Care Survey who were receiving home health care, by current depression diagnosis

Characteristic	No depression diagnosis[a]		Depression diagnosis[a]		Missing data[b]				
	N	%	N	%	N	%	F	df	p
Patients	1,968	93.6	169	6.4	0	—			
Demographic									
Age	80.8±12.0		78.6±11.5		0	—	5.80	1, 1,006	.016
Female	1,318	68.9	125	68.6	0	—	<.01	1, 1,006	.959
Race-ethnicity					57	2.7	2.03	2, 1,903	.134
White, non-Hispanic	1,549	74.1	147	82.9					
Black, non-Hispanic	202	15.5	4	4.1					
Hispanic	127	9.0	13	12.4					
Other	35	1.4	3	.6					
Married or living with a partner	764	40.6	73	44.9	170	8.0	.47	1, 1,005	.494
Primary caregiver other than the home care agency	1,680	87.5	140	68.6	12	.6	13.21	1, 1,006	<.001
Functional: activities of daily living patient needs help with (M±SD)	3.0±3.2		2.6±2.5		20	.9	3.35	1, 1,006	.067
Health care use									
Institutionalized before home health care[c]	1,152	57.3	90	45.3	15	.7	2.65	1, 1,006	.104
Skilled nursing visits (M±SD)[d]	9.8±34.1		12.5±52.4		26	1.2	.48	1, 1,006	.488
Home health aide visits (M±SD)[d]	4.2±26.4		6.4±23.2		28	1.3	1.43	1, 1,006	.233
Any therapy visits[d,e]	874	48.0	79	40.9	17	.8	1.37	1, 1,005	.242
Any medical social service visits[d]	152	9.4	15	3.6	3	.1	6.69	1, 1,006	.010
Current medications (M±SD)	10.8±7.7		11.6±8.5		19	.9	1.56	1, 1,006	.212
Currently taking an Antidepressant	592	31.6	130	73.2	0	—	47.13	1, 1,006	<.001

[a] Unweighted Ns and weighted percentages
[b] Unweighted Ns and percentages
[c] Institutional settings include hospitals, emergency rooms, nursing homes, skilled nursing facilities, subacute facilities, rehabilitation facilities, assisted living facilities.
[d] All visits were within the past 60 days or since admission.
[e] Includes physical, speech and language, and occupational therapies

diagnosed depression was 78.6 years, compared with 80.8 years for those without a diagnosis (p=.016). Patients with diagnosed depression were significantly less likely to have a primary caregiver other than the home health care agency (p<.001). A depression diagnosis was not associated with gender, race-ethnicity, or marital status.

A depression diagnosis was not associated with patients' need for assistance with activities of daily living or with most measures of home health care utilization. It was associated with a substantially lower likelihood of receiving medical social services (p=.010). On average, patients in the study population were taking about 11 medications, but the number did not differ significantly by depression diagnosis. The rate of antidepressant use was much higher among patients with diagnosed depression than without (73.2% versus 31.6%; p<.001).

Discussion

Nationally, 6.4% of elderly Medicare fee-for-service patients receiving home health care had a current diagnosis of depression. For over 90% of the patients with diagnosed depression, the diagnosis was secondary to the patient's primary diagnosis. Diagnosed depression was associated with a limited number of patient characteristics.

The 6.4% rate reflects the prevalence of depression as recognized and documented by patients' physicians and home health agencies. This rate is substantially lower than the 13.5% rate of major depression found by Bruce and colleagues (2), who used the Structured Clinical Interview for DSM-IV Axis I Disorders. The rate in our study is also lower than the rate of probable major depression reported by Ell and colleagues (4), which was based on use of a depression screening tool by nurses. Our finding is consistent with the medical-surgical focus of home health care. Late-life depression was rarely considered a condition that warranted home health care intervention, and it may be poorly recognized and seriously underdiagnosed at the national level.

On the other hand, our estimated rate of 6.4% is twice as high as the rate reported in a previous study, which was based on review of home health medical records (2). This difference could reflect an increase in recent years in the recognition of depression by referring physicians, but it may also result from differences between the two study populations—a national sample of elderly Medicare fee-for-service patients receiving home care compared with a sample of elderly Medicare patients from a single agency.

Underrecognition and underdiagnosis of depression may partly explain why we found the two groups—patients with and without a depression diagnosis—to differ in few characteristics. Patients with a depression diagnosis were younger than those without a diagnosis. This is consistent with previous findings that the prevalence of current and lifetime major depressive disorders declines with age (6). The age difference may also reflect a greater tendency to dismiss depression among older patients; in addition, older patients may have more complex medical conditions and may be less likely to manifest depression in the form of depressed mood (7,8). Among patients with diagnosed depression, the lower likelihood of having a caregiver other than the agency highlights a dimension of vulnerability and lack of social support among these patients. Their much lower rate of medical social service use suggests that they may not be getting appropriate support from a social worker as part of home health care, which may result from the passivity and withdrawal associated with depression. As in a previous study (2), gender was not associated with a depression diagnosis in this population.

The overall high rate of antidepressant use regardless of diagnosis may reflect alleviation of depression among some antidepressant users, a high rate of depression detection yet a low rate of documented diagnosis, and possible use of antidepressants for conditions other than depression, such as pain and insomnia. Although patients with diagnosed depression had a much higher rate of antidepressant use, the data did not allow us to examine the adequacy of antidepressant therapy, which might be low, as has been found in previous studies (2).

Conclusions

In 2007 among elderly Medicare fee-for-service patients, the rate of having a depression diagnosis recorded in home health medical records was higher than the rate found in an earlier study but substantially lower than reported prevalence rates in previous studies that used diagnostic interviews or depression screening. This suggests possible underdetection and undertreatment in this population. Diagnosed depression was associated with being younger, having no caregiver other than the agency, being less likely to use any medical social services, and having a higher rate of antidepressant use. Clinical strategies and economic incentives to improve recognition and management of depression in home health care are needed to address this prevalent condition and related burdens among older patients.

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