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

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Abstract

Objectives—This study examined the prevalence of diagnosed depression among elderly Medicare fee-for-service home healthcare patients, and key demographic, functional, and care utilization characteristics associated with diagnosed depression.

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 complex sampling design were used to test differences in categorical and continuous measures, respectively, by depression diagnosis.

Results—Nationally, 6.4% (N=42,192) of the study population received a home health diagnosis of depression. Diagnosed depression was associated with younger age (p=.016), lack of a primary caregiver outside home care agency (p<.001), a lower likelihood of receiving medical social service (p=.010), and a greater likelihood of using antidepressants (p<.001).

Conclusions—The rate of diagnosed depression was higher than previously documented, but lower than estimated prevalence of depression based on diagnostic interviews or depression screening tools. Diagnosed depression was associated with a limited number of patient characteristics.

Older patients receiving home healthcare have substantially greater medical illness and disability than elderly in the community [1]. The burden of depression is disproportionately high in this vulnerable population. One prospective study from suburban New York State reported a prevalence of 13.5% for major depression and 10.8% for minor depression among a random sample of elderly home healthcare patients [2]; in only 3% of these patients was depression included in the list of referral diagnoses; home health nurses had great difficulty adequately and correctly identifying depression [3]. Another study among elders admitted to home healthcare programs via primary care referral found a prevalence of 8.5% for probable major depression and 1.6% for mild depression based on nurse screening [4]. Little is known about the prevalence of depression recognized in home healthcare at the national level.

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In this study, we analyzed the 2007 National Home and Hospice Care Survey (NHHCS) to estimate the prevalence of diagnosed depression among elderly Medicare fee-for-service home healthcare patients. We also examined key demographic, functional, and care utilization characteristics associated with 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 healthcare patients or hospice discharges were randomly selected within each agency. Current home healthcare patients were patients 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 staffs and medical records; the patient health module had an overall unweighted response rate of 66% (weighted: 55%) [5].

We focused on current home healthcare patients 65 years or older at the time of the interview and had Medicare fee-for-service (under the episode-based prospective payment system) as the primary payment source (accounting for 93% of all elderly Medicare patients in home healthcare). This represents a population of relatively homogeneous clinical need (i.e., patients receiving post-acute care for medical and surgical reasons) and payment and financial incentives for the agencies.

For each patient selected, current home healthcare diagnoses (one primary and up to fifteen secondary) were reported. While the NHHCS did not provide explicit information on the source of these diagnoses, they most commonly come from diagnoses listed by the referring physician at the patient's admission into home healthcare, and can be modified based on assessment by the home health agency/nurse. Among our patient sample, 24% had a current primary diagnosis that was different from the primary diagnosis at admission, indicating some, albeit limited, update and revision by agencies/nurses when documenting current diagnoses. Current depression diagnosis either by the referring physician or the agency (“diagnosed depression” hereafter) was defined as the occurrence of at least one of the following International Classification of Disease, 9th Revision (ICD-9-CM) codes in any of the current primary and secondary diagnosis fields: 296.2× (major depression single episode), 296.3× (major depression recurrent episode), 311× (depression not elsewhere classified) and 300.4× (dysthymia, anxiety depression, or prolonged depressive reaction).

We examined key demographics (age, gender, race/ethnicity, marital status/living arrangements, and presence of caregiver other than home health agency), function (number of activities of daily living the patient needed help with), and healthcare utilization (whether institutionalized before admission, skilled nursing and home health aide visits / any therapy visits / any medical social service provided by the agency in the past 60 days or since admission, number of current medications, and the use of antidepressants).

Descriptive statistics were weighted to reflect probabilities of sample selection, and to adjust for non-response [5]. Pearson and Wald tests corrected for the complex sampling design were used to test differences in categorical and continuous characteristics, respectively, between the diagnosed and non-diagnosed groups.

This research was exempted from Institutional Review Board review at the Weill Cornell Medical College.

Results

Nationally, 6.4% of the study population had a current diagnosis of depression; depression was the primary diagnosis in only .6% of patients. Patients with diagnosed depression had a mean age of 78.6 (vs. 80.8 among those without a diagnosis, p=.016), and were significantly less likely to have a primary caregiver outside the agency (p<.001). Depression diagnosis was not associated with gender, race/ethnicity, or marital status/living arrangement.

Depression diagnosis was not associated with patients' need for assistance with activities of daily living or most measures of home healthcare utilization, but was associated with a substantially lower likelihood of receiving medical social services (4.7% vs. 11.2%; p=.013). Patients in the study population were on average taking about 11 medications, but this number did not differ significantly by depression diagnosis. Rate of antidepressant use was much higher among patients with (73.2%) than among those without a depression diagnosis (31.6%; p<.001).

Discussion and Conclusions

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

Our findings reflect the prevalence of depression as recognized and documented by patients' physicians and home health agencies, which was substantially lower compared with that of major depression based on Structured Clinical Interview for DSM-IV Axis I Disorders (SCID) found by Bruce et al (13.5%) [2]; it was also lower than the rate of probable major depression based on nurse screening reported in Ell et al. [4]. Our finding is consistent with the medical/surgical focus of home healthcare, that late-life depression was rarely considered a condition that warranted home healthcare intervention, and that it may be poorly recognized and seriously under-diagnosed at the national level.

On the other hand, our estimated rate of 6.4% is twice as high as the rate based on home healthcare medical records reported in a previous study [2]. This difference could reflect an increase in the recognition of depression by referring physicians in recent years, but may also be because of differences between the two studies in study populations (the general elderly Medicare fee-for-service patients vs. elderly Medicare patients at one single agency).

Under- recognition and diagnosis of depression may partly explain why we found the two groups – those with and without a diagnosis – to differ along few dimensions. We found diagnosed patients to be of younger age. This is consistent with previous findings that prevalence of current and lifetime major depressive disorders declines with age [6]. The age difference may also reflect greater tendency to dismiss depression by older patients as well as greater medical complexities and lower manifestation of depression in the form of depressed mood [7], [8]. The lower likelihood of having a caregiver outside the agency revealed one dimension of vulnerability and lack of social support among depressed patients. The much lower rate of medical social service use suggests that this population may not be getting appropriate support from a social worker as part of home healthcare possibly as a result of the passivity and withdrawal associated with depression. Consistent with what a previous study found [2], gender was not associated with a depression diagnosis in this population.

The overall high rate of antidepressant use regardless of diagnosis may reflect: 1) effectiveness of some antidepressant use that has led to alleviation of depression; 2) high

rate of depression detection yet a low rate of documented diagnosis; 3) possible use of antidepressants for conditions other than depression (e.g., 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 quality of antidepressant therapy, which might be low as found by previous studies [2].

In conclusion, in 2007, the rate of receiving a home healthcare depression diagnosis in their medical records among elderly Medicare fee-for-service patients was higher than what was found in an earlier study but substantially lower than reported prevalence based on diagnostic interviews or depression screening from previous studies, suggesting possible under- detection and treatment among this population. Diagnosed depression was associated with younger age, having no caregiver outside of the agency, a lower likelihood of using any medical social services, and a higher rate of antidepressant use. Clinical strategies and economic incentives for effective recognition and management of depression in home healthcare are needed to address this prevalent condition and related burdens among older patients.

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Table 1

Characteristics of Home Healthcare Patients by Current Home Healthcare Depression Diagnosis

	No depression diagnosis (%)[§]	Depression diagnosis[§] (%)	% (N) Missing[€]	F	df	P
Estimated number of patients, N (%)	620,163 (93.6)	42,192 (6.4)				
Demographics						
Age[*]	80.8±12.0	78.6±11.5	.00	5.80	(1, 1006)	.016
Female	68.9	68.6	.00	<0.01	(1, 1006)	.959
Race/ethnicity			2.67 (57)			
White, not Hispanic	74.1	82.9		2.03	(2, 1903)	.134
Black, not Hispanic	15.5	4.1				
Hispanic	9.0	12.4				
Others	1.4	.6				
Married or living with partner	40.6	44.9	7.96 (170)	.47	(1, 1005)	.494
Primary caregiver outside home care agency	87.5	68.6	.56 (12)	13.21	(1, 1006)	<.001
Functional						
Number of activities of daily living patient needs help with[*]	3.0±3.2	2.6±2.5	.94 (20)	3.35	(1, 1006)	.067
Healthcare Utilization						
Institutionalized[#] before home care	57.3	45.3	.70 (15)	2.65	(1, 1006)	.104
Number of skilled nursing visits[*]	9.8±34.1	12.5±52.4	1.22(26)	.48	(1, 1006)	.488
Number of home health aide visits[*]	4.2±26.4	6.4±23.2	1.31 (28)	1.43	(1, 1006)	.233
Receipt of any therapy visits[†]	48.0	40.9	.80 (17)	1.37	(1, 1005)	.242
Receipt of any medical social service	9.4	3.6	.14(3)	6.69	(1, 1006)	.010
Number of medications[*]	10.8±7.7	11.6±8.5	.89 (19)	1.56	(1, 1006)	.212
Taking any antidepressant	31.6	73.2	.00	47.13	(1, 1006)	<.001

[*] Mean (±SD) instead of percentage reported

[§] Weighted percentages reported

[€] Unweighted percentages and Ns reported.

[#] Institutional settings include hospitals, emergency rooms, nursing homes/skilled nursing facilities/sub-acute facilities, rehabilitation facilities and assisted living/other.

[†] Therapy includes physical, speech/language and occupational therapies.