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Racial and ethnic variation in home healthcare nurse depression assessment of older minority patients

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Abstract

Objective—To determine the racial/ethnic effect of depression symptom recognition by home healthcare nurses.

Methods—This is a secondary analysis of administrative data from a large, urban home healthcare agency. Patients were 65 years and older with a valid depression screen; identified as Caucasian, African American, or Hispanic; and admitted to homecare in 2010 (N=3711). All demographic and clinical information were obtained from the electronic medical record.

Results—Subjects were 29.34% Caucasian, 37.81% African American, and 32.85% Hispanic. 6.52% had a formal chart diagnosis of depression and 13.39 % received antidepressant therapy. The rates of positive depression screens by nurses were higher in Caucasians than African Americans or Hispanics (13.41% vs. 9.27% vs. 10.99%; $[\chi^2]=10.70$, $DF=2$; $p<0.01$). Depression screening rates were then stratified by the number of clinical indicators from the chart (depression diagnosis or antidepressant on medication list). The proportion of positive screen increased for minorities with an increase in the number of indicators. African Americans had significantly greater positive screens with 2 indicators compared to Caucasians and Hispanics (50.00% vs. 23.81% vs. 35.59%; $[\chi^2]=6.65$, $df=2$; $p=0.04$).

Conclusions—These findings show a wide range of variation in screening for depression among ethnic groups. The rates increase for minorities with the presence of increased clinical indicators, suggesting that nurses may screen higher in minorities when there is higher clinical suspicion. Future research in home healthcare should be aimed at training nurses to conduct culturally tailored depression screening in order improved management of depression in older minorities.

Keywords

Geriatric depression; Race/Ethnicity; Mental health disparities

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Introduction

Depression in older adults, particularly in primary care, has traditionally been under-recognized¹⁻³, however interventions designed to address late-life depression in primary care settings have resulted in improved recognition of depressive symptoms in this population⁴⁻⁷. Despite overall increased rates of recognition of geriatric depression, disparities in depression care continue to exist for older homebound minority patients^{8,9}. Although independent assessment of home healthcare (or homecare) patients demonstrated no racial differences in depression prevalence¹⁰, national survey data of homecare agencies have shown lower rates of documented depression diagnosis and treatment with antidepressants in older African American homecare patients compared to Caucasians^{11,12}. Rates of depression have been higher among older Hispanics with comorbid medical illness compared to those without physical complications, but the corresponding treatment rates remained low¹³.

Training interventions designed to improve recognition of depressive symptoms have been shown to increase home healthcare nurses' confidence in depression detection¹⁴ and lead to more patients being referred for mental health evaluation and possible treatment¹⁵. Although such interventions have shown improvement in depression screening and patient outcomes, there has been no evidence of the extent to which they have reduced racial and ethnic disparities in depression detection in home healthcare.

Beginning in January 2010, the Centers for Medicare and Medicaid Services mandated that all homecare agencies perform depression screening as part of the nursing assessment, the Outcome and Assessment Information Set, version C (OASIS-C)¹⁶. As a result, it is now customary for routine depression screening to be done within homecare with a standardized measure. The objective of this study is to compare racial and ethnic differences in rates of depressive symptom recognition using current homecare depression screening procedures. We will also examine if clinical indicators from the chart (i.e. depression diagnosis and the presence of an antidepressant on the medication list) have any effect on the rate of positive screening.

Methods

The data for this cross-sectional analysis were collected from the electronic medical records (Allscripts®) of the certified home healthcare agency (CHHA), the short-term program, of the Montefiore Home Healthcare Agency for all admissions from 01/01/2010 to 12/31/2010. This large, urban agency located in the Bronx, NY, serves a racial and ethnically diverse patient population. Home healthcare patients aged 65 and older with a valid depression screen at admission were included in the sample (N=3711). Patients with missing diagnostic or medication records were excluded. Approval for this study was obtained by the Institutional Review Boards of the Montefiore Medical Center and the Weill Cornell Medical College.

The Patient Health Questionnaire-2 (PHQ-2) score was obtained from the first start-of-care (admission) OASIS-C assessment found within the calendar year. Data from readmissions to

homecare or resumptions of care after a short hospitalization were not included in these analyses. The PHQ-2 (Figure 1) is a screening measure of depression that has been well studied and traditionally used in primary care settings^{17,18}. The PHQ-2 offers the homecare agency a greater opportunity to recognize depression in older homebound patients and assist in treatment planning with primary care physicians¹⁹. A cut-off of 2 points instead of the traditional cut-off of 3 was used for this study because a score of 2 has been found to have greater sensitivity and negative predictive value, therefore reducing the number of false negative findings²⁰.

Depression screening may have been influenced by two clinical indicators in the medical record. The first was a chart diagnosis of depression, identified for this analysis by the following ICD-9 codes: 296.2, 296.3, and 311. These codes were used to capture all forms of unipolar depressive disorders that might require treatment. The diagnosis was made prior to admission to homecare and was usually transferred from primary care or hospital records. The second clinical indicator was the presence of an antidepressant in the medication record. For this analysis, medications were reviewed by the physician investigator (YRP) for accuracy and only medications recorded within the first 14 days of admission were considered. In most cases the antidepressant was also prescribed prior to admission to homecare.

Data on race/ethnicity, gender, age, and Activities of Daily Living (ADL) were collected from the start-of-care OASIS-C. Racial groups other than Caucasians, African Americans, and Hispanics were excluded due to small sample sizes. The classification of racial/ethnic groups came from a single indicator provided on the OASIS-C and were reported as listed. Medicaid eligibility was obtained from patient insurance information and used here as a proxy for socioeconomic status because income was not available. The Chronic Disease Score (CDS)²¹ is a measure of medical comorbidity. The score was calculated using medication record data with an algorithm developed by one of the authors (RLG) based on 2010 American Hospital Formulary Service medication codes.

Associations between race and the other covariates were tested with either analysis of variance for continuous variables or Chi-squares for categorical variables. The dependent variable (presence or absence of a positive PHQ-2 score, defined as ≥ 2), and the independent variable of interest (race/ethnicity) were both categorical. The variable representing the clinical indicators of a chart documented depression diagnosis and the presence of an antidepressant in the medication record were also coded as categorical variables. The variable was coded as "0" for no indicators present, "1" if either depression diagnosis or an antidepressant were documented in the chart, or "2" if both a depression diagnosis and an antidepressant were documented in the chart. The primary outcome of positive PHQ-2 scores was analyzed by race using Chi-square tests, stratifying by the number of clinical indicators present. The statistical program used to conduct these analyses was STATA Statistical Software Release 10 (Statacorp, College Station, TX)²².

Results

The overall racial composition of this sample (N=3711) was 29.34% (1089/3711) Caucasian, 37.81% (1403/3711) African American, and 32.85% (1219/3711) Hispanic. Caucasians were on average older than the other two groups, while African Americans were more likely to be female (Table 1). Hispanics were more likely to receive Medicaid and had a higher mean Chronic Disease score than Caucasians and African Americans. There were no statistically significant differences in ADL impairments among the three groups.

Regarding the two chart indicators that may influence depression screening, 6.52% (242/3711) of patients had a chart diagnosis of depression and 13.39% (497/3711) had been prescribed an antidepressant. The rates of both depression diagnosis and antidepressant prescriptions were higher in Caucasians than the other two groups.

Overall, 11.05% (410/3711) of patients screened positive for depression by PHQ-2. Caucasians had the greatest proportion of positive depression screens, with Hispanics having the next highest rate, and African Americans the lowest (13.41% vs. 10.99% vs. 9.27%; $\chi^2=10.70$, $df=2$; $p<0.01$; Table 2).

Depression screening based on race and ethnicity varied by the number of clinical indicators present in the medical record. Among those with no additional indicators, the distribution was similar to the overall sample with Caucasians having significantly higher rates than the other two groups. The same was true for those with 1 indicator but the difference was not statistically significant. However, for patients with both a chart diagnosis and antidepressant prescription, African Americans and Hispanics had significantly higher rates of positive scores compared to Caucasians (50.00% vs. 35.59% vs. 23.81%, respectively; $\chi^2=6.65$, $df=2$; $p=0.04$).

Discussion

The main finding of this study is the racial and ethnic differences in the rates of positive depressive screens among older home healthcare patients, with overall higher rates higher in Caucasians than other racial/ethnic groups. These are consistent with findings in the rates of depression diagnosis from studies of a national homecare sample¹¹. Although we generally found Caucasians to have higher rates of positive depression screens than the other racial/ethnic groups, there was a notable exception observed among patients with multiple clinical indicators of depression already documented in the homecare chart. African Americans had the highest proportion of positive screens in this group and Caucasians the lowest.

These results can be viewed within two different contexts regarding the accuracy of the depression assessment. Studies of major depression in older homecare patients¹⁰ and community-dwelling adults^{23,24} have shown no racial differences in prevalence of major depression. Therefore, one might also expect that the patients in this study had no significant differences in depression prevalence. This would mean that depression symptoms were not recognized in older minorities who would have otherwise screened positive. Missed cases of depressive symptoms in these patients could be related to either patient factors, such as the stigma associated with mental health conditions, which may contribute to underreporting of

depressive symptoms, particularly among African Americans^{25–27}, or provider factors, i.e. less sensitivity in the screening of minority patients among the nurses. Alternatively, if the screening rates were accurate for this sample, then these data would be consistent with other studies that show lower prevalence rates of depression for older African Americans^{28–30}. A major limitation of this study is the lack of an independent assessment of depression to determine the accuracy of positive depression screens.

The highest rates of positive depression screens among those with 2 clinical indicators were for minority patients, unlike those with 0 or 1 indicator, suggests that minorities are more likely to screen positive when there were indicators in the chart to prompt the nurses to suspect depression. While clinical indicators for depression in the home healthcare chart may have increased the nurses' sensitivity in depression screening, these results also revealed that some patients who were receiving antidepressants still experienced clinically significant depressive symptoms. The disproportionate number of African American and Hispanic patients in this study who were not fully benefiting from treatment suggests that there may be disparities within primary care or mental health in the quality of the depression care received by these older, homebound patients. This highlights the importance of communication of between the homecare nurse and the treating physician in depression treatment planning and management.

The use of administrative data limits our ability to examine the reasons for the differences in depression recognition. As stated above, there was also no way to measure the accuracy of nurse screening to determine if there was a true disparity for minorities. The data were collected for the first year of the modified OASIS assessment, so it is difficult to determine the ability of all nurses to administer the depression screen appropriately. Past studies have shown modest agreement at best of detecting depressive symptoms between home healthcare nurses and research raters^{31,32}. A strength of this study is our ability to access information on thousands of older homebound patients, with the majority being ethnic minorities within a service setting that has not been as widely studied as primary care.

Conclusion

Although this study confirmed our hypothesis of racial and ethnic differences in depression recognition among older home healthcare patients, we see it as the first of many steps toward improving the quality of depression care and management for older minority patients. Future research should be aimed at having a better understanding of the barriers that prevent older minority patients from achieving equivalent rates with Caucasians of depression detection by community providers, such as homecare nurses, and of depression diagnosis by primary care physicians. Once these have been determined, interventions can be designed to alleviate those barriers, leading to improvement in depression care for older minority patients.

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(M1730) Depression Screening: Has the patient been screened for depression, using a standardized depression screening tool?

- ☐ 0 - No
- ☐ 1 - Yes, patient was screened using the PHQ-2© scale. (Instructions for this two-question tool: Ask patient: "Over the last two weeks, how often have you been bothered by any of the following problems")

PHQ-2© Pfizer	Not at all 0 - 1 day	Several days 2 - 6 days	More than half of the days 7 - 11 days	Nearly every day 12 - 14 days	N/A Unable to respond
a) Little interest or pleasure in doing things	☐ 0	☐ 1	☐ 2	☐ 3	☐
b) Feeling down, depressed, or hopeless?	☐ 0	☐ 1	☐ 2	☐ 3	☐

- ☐ 2 - Yes, with a different standardized assessment-and the patient meets criteria for further evaluation for depression.
- ☐ 3 - Yes, patient was screened with a different standardized assessment-and the patient does not meet criteria for further evaluation for depression.

Figure 1.

PHQ-2 depression screening (M1730) from Outcome and Assessment Information Set, version C.

Table 1
Demographic Categorical and Continuous Characteristics of Home Healthcare Patients Age 65+ By Race/Ethnicity and Chi-squared Analysis or ANOVA Analysis. (N=3711)

Characteristics	Caucasian N=1089	African American N=1403	Hispanic N=1219	[Chi] ² , df/ F-statistic, df	P-value
Age, in years					
% Female	81.02 (8.77)	78.04 (7.96)	76.75 (7.77)	82.30, 2	<0.01
% Medicaid Eligible	58.59 (638/1089)	71.35 (1001/1403)	63.30 (771/1218)	46.06, 2	<0.01
% Living Alone	15.52 (169/1089)	25.09 (352/1403)	56.77 (692/1219)	503.97, 2	<0.01
Chronic Disease Score	38.93 (424/1089)	39.13 (549/1403)	33.88 (413/1219)	9.34, 2	0.01
% Help with ADL's	5.54 (2.94)	6.00 (2.97)	6.29 (3.16)	17.86, 2	<0.01
% Depression Diagnosis	92.31 (996/1079)	91.82 (1269/1382)	93.76 (1127/1202)	3.71, 2	0.16
% Antidepressant	8.26 (90/1089)	4.70 (66/1403)	7.05 (86/1219)	13.60, 2	<0.01
% PHQ-2 2	18.92 (206/1089)	8.05 (113/1403)	14.60 (178/1219)	64.66, 2	<0.01
	13.41 (146/1089)	9.27 (130/1403)	10.99 (134/1219)	10.70, 2	0.01

Table 2

Percent of Home Healthcare Patients Age 65+ with PHQ-2 2 by Race/Ethnicity, Depression Diagnosis, and Treatment Status. (N=3711)

	Caucasians	African Americans	Hispanics	[Chi] ² , df	P-value
Overall % PHQ-2 2	13.41 (146/1089)	9.27 (130/1403)	10.99 (134/1219)	10.70, 2	0.01
% PHQ2-2 2 by clinical indicators: depression diagnosis and/or antidepressant					
0	10.51 (90/856)	7.48 (94/1256)	8.19 (83/1014)	6.23, 2	0.04
1	24.12 (41/170)	17.39 (20/115)	20.55 (30/146)	1.91, 2	0.39
2	23.81 (15/63)	50.00 (16/32)	35.59 (21/59)	6.65, 2	0.04