BRIEF REPORT: Patient Cognitive Status and the Identification and Management of Depression by Primary Care Physicians

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OBJECTIVES: No known study has examined the role of patients' cognitive impairment in the identification and management of depression by primary care physicians.

DESIGN: A cross-sectional survey conducted between 2001 and 2003.

PARTICIPANTS: A sample of 330 adults aged 65 and older from Maryland primary care practices with complete information on cognitive and psychological status, and physician assessments.

MEASUREMENTS: Primary care physicians were asked to rate cognition and depression on a Likert scale, as well as report management of depression within 6 months of the index visit. Patient interviews included standardized measures of psychological and cognitive status.

RESULTS: Older adults identified as depressed by their physician were more likely to be identified as cognitively impaired (unadjusted odds ratio [OR] = 3.71, [95% confidence interval] [CI] [1.93, 7.16]). Older adults identified as cognitively impaired had a tendency to be managed for depression (unadjusted OR = 2.62, 95% CI [0.96, 7.19]). In adjusted multivariate models, these associations remained unchanged.

CONCLUSIONS: When physicians identified a patient as cognitively impaired, they were more likely to identify the patient as depressed and to report treatment of the depression. An understanding of how physicians think about depression in the context of cognitive impairment is important for designing depression interventions for older adults.

KEY WORDS: aged; cognitive impairment; depression; diagnosis; primary care.

Cognitive impairment and depression are common and often coexist among older primary care patients.[1] Previous research has focused on accuracy, and whether or not physicians diagnosed depression[2–5] or cognitive impairment,[6–8] without comment on the coexistence of the conditions. However, little is known about the real-world management of depression in primary care patients who are diagnosed with depression and cognitive impairment.

Our goal was to examine the influence of primary care physician identification of cognitive impairment on the identification and management of depression. Because of competing demands of primary care practice[9] we hypothesized that patients identified by primary care physicians as cognitively impaired would be less likely to be identified as depressed. In addition, we hypothesized that the patients that physicians rated as both cognitively impaired and depressed would be less likely to have been treated for depression.

METHODS

The objective of the Spectrum Survey was to describe depressive symptoms in older adults that do not meet standard criteria. The design of this study was a cross-sectional survey of both patients and physicians. Thirteen community practices and 47 physicians (28 family physicians and 19 internists) participated.[10,11] Patients who agreed to participate at the index visit were scheduled for a 90-minute in-home interview. In-home interviews were obtained for 357 people, but 2 persons did not complete the interview, leaving a sample of 355 persons. Participating physicians did not have access to patient survey data. Details of the study design of the spectrum study are available elsewhere.[11] The study protocols were approved by the Institutional Review Board of the University of Pennsylvania.

Physicians were asked to provide assessments of each patient's level of depression and cognition at the index visit on a 4-point scale: "none at all," "mild," "moderate," or "severe." For this investigation, physician identification of depression or cognitive impairment was defined as any rating of "mild," "moderate," or "severe." Physicians were asked about their management of depression: "Which of the following have you provided for this patient on this visit or in the last 6 months?" As in prior works,[10,11] physicians chose from "provided counseling/supportive listening for depression," "tried to refer to a mental health specialist," "prescribed psychotropic medication for depression, anxiety, or sleep." Physicians rated how well they knew the patient on a Likert scale.

Participant Interviews

Participant data included age, gender, marital status, self-reported ethnicity, education, and physical function[12] and number of office visits in the previous 6 months. The Mini-Mental State Examination (MMSE) was used as an assessment of global cognition.[13] The Controlled Oral Word Association Test (FAS) was utilized to test verbal production and access to semantic knowledge and language.[14] The Hopkins Verbal Learning Task (HVLT) was used to test new verbal learning and memory with scores recorded as the total number of words recalled over 3

trials.[15] The Centers for Epidemiologic Studies Depression (CES-D) scale was used to measure depression symptoms with a score of 17 or greater indicating significant depressive symptoms.[16] The Beck Anxiety Inventory (BAI) was used as a continuous score to measure anxiety symptoms.[17] The Beck Hopelessness Scale (BHS) was used as a continuous score to measure hopeless.[18]

Analytic Strategy

Descriptive statistics (means with standard deviations and proportions) were used to characterize the patients' baseline characteristics. Of the 355 patients in the study sample, 14 missing physician assessments and 11 missing cognitive and/or psychological variables were excluded, leaving 330 patients for this analysis. Multivariate analysis was used to examine the role of physician identified cognitive impairment in the identification of depression. In the second phase of analysis, multivariate analysis was used to examine the relationship between physician identification of cognitive impairment and management of depression. These analyses included 186 patients who were identified as depressed, of which 2 patients were excluded because of incomplete information on physician management, leaving a sample size of 184. All multivariate models were adjusted for age, gender, ethnicity, education, function, cognition (MMSE, FAS, HVLT), and psychological status (CES-D, BHS, BAI). Using the Hosmer-Lemeshow test, a goodness-of-fit diagnostic and plot showed that the coefficient estimates were not influenced by any 1 observation. Data analysis was performed using SPSS version 10.

RESULTS

Baseline Characteristics

The mean age ± SD of our study sample was 75.2 ± 6.0 years, with a range of 65 to 92 years. Of the 330 participants, 249 (75.5%) were women. The self-identified ethnic groups of the participants consisted of 215 (65.1%) whites and 115 (34.9%) minority (African American, Hispanic, and American Indian). Physicians rated 252 patients as "well known," 73 as "somewhat known," and 5 as "not at all known" to the individual physician. The average time between the physicians' survey and the home interview was 1.16 ± 2.2 weeks.

Cognitive Factors Associated with Physician Identification of Depression

Physicians were more likely to identify patients as depressed if they also rated them as cognitively impaired (unadjusted OR=3.71, 95% CI=[1.93, 7.16]) (Table 1). This finding remained significant in the final model after adjusting for potential confounders, adjusted OR=3.44, 95% CI=[1.63, 7.29].

Cognitive Factors Associated with Physician Report of Depression Management

Physicians were more likely to manage patients for depression if they also rated them as cognitively impaired (unadjusted OR=2.62, 95% CI=[0.96, 7.19]), although these findings did not reach conventional levels of significance (Table 1). In the final adjusted model, the point estimate remained substantially unchanged, adjusted OR=2.47, 95% CI=[0.82, 7.44].

Table 1. Association Between Physician Identification of Cognitive Impairment and Identification of Depression (*n*=330), and Association Between Physician Identification of Cognitive Impairment and Management of Depression (*n*=184)

Primary Care Physician Ratings	OR (95% CI)	
	Unadjusted	Adjusted*
Identification of depression	3.71 [1.93, 7.16]	3.44 [1.63, 7.19]
Management of depression	2.62 [0.96, 7.19]	2.47 [0.82, 7.44]

Note: Data gathered from the Spectrum Survey, 2001 to 2003.
*Adjusted for sociodemographic characteristics (age, gender, ethnicity, education), functional status, psychological status (CES-D, BHS, BAI), and cognitive status (MMSE, FAS, HVLT).
CES-D, Centers for Epidemiologic Studies Depression; BHS, Beck Hopelessness Scale; BAI, Beck Anxiety Inventory; MMSE, Mini-Mental State Examination; FAS, Controlled Oral Word Association Test; HVLT, Hopkins Verbal Learning Task; CI, confidence interval; OR, odds ratio.

DISCUSSION

We found that when physicians identified the patient as cognitively impaired, they were more likely to identify the patient as depressed and to report that depression was managed within 6 months of the index interview. The results were not substantially changed in models that adjusted for patient levels of depression symptoms or cognitive performance. Our findings suggest that primary care doctors do recognize and treat clinically significant depression in the context of identified cognitive impairment. In addition, primary care physicians may be prompted to identify and manage depression, as treating depression in the setting of cognitive impairment (with either pharmacological or nonpharmacological interventions) improves patient outcomes.[19] However, as much of the focus has been on "accurate" diagnosis, little effort has been made to assist primary care physicians with the time and social services support required to manage patients with cognitive impairment and dementia.[20]

Prior studies have focused on accuracy, and the physician identification of either depression[2–5] or cognitive impairment,[6–8] but not both. However, our goal was not to understand accuracy in diagnosis, but to understand the process of care. For individuals to receive depression treatment, 2 decisions have to be made by the physician: does this patient have depression and would depression treatment be useful? Our study suggests that primary care physicians do recognize depression and the need to treat depression in the setting of cognitive impairment.

We could find only 1 other report that asked primary care doctors to provide ratings of older patients' cognitive and depression status.[4] In that study by O'Connor et al., primary care physicians were 1.23 times more likely to rate their patients as depressed if they also rated their patients as having dementia (as calculated from the tabulated value from a logistic regression model). In O'Connor et al., the physicians were asked to identify dementia and not cognitive impairment, which may explain why the point estimate for the association of identification of dementia was less strong than in our study (OR of 1.23 vs 3.44).

This study has a number of limitations. General limitations of the Spectrum study have been discussed elsewhere.[10,11] First, we obtained our results from primary care sites in Maryland, which may not be representative of

other practices. However, the Maryland practices were community-based and not academically affiliated. Second, the data on the identification and treatment of depression consisted of all who were selected for the larger project, agreed to participate, and had complete physician assessments. However, among persons who were depressed, no significant differences were found in the characteristics of those who met study eligibility criteria and those who agreed to participate.[10,11] Third, there is potential for error associated with physician assessment of patient cognitive and psychological status, including imperfect recall. Despite limitations, our results merit attention as we attempt to further characterize the relationship between the identification of depression and cognitive impairment.

In summary, these data indicate that identification of depression by primary care physicians was associated with concomitant identification and management of cognitive impairment. Our study lays the groundwork for developing interventions focused in primary care that account for cognitive impairment or dementia that commonly accompanies depression and other neuropsychiatric symptoms. Developing interventions that provide supportive services available in the primary care setting will be key to improving mental health outcomes for community-dwelling older adults.

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