A Cross-Sectional Study of Somatic Symptoms and the Identification of Depression Among Elderly Primary Care Patients

Hillary R. Bogner, MD, MSCE; Puja Shah, BA; and Heather F. de Vries, MSPH

Objective: To examine the relationship between somatization and depression as rated by primary care physicians.

Method: This study was a cross-sectional survey of 355 older adults with and without significant depressive symptoms. Physicians' ratings of somatization and depression were obtained for 341 of the 355 patients. Patients were sorted into 4 groups on the basis of physician ratings (no depression/no somatization, somatization only, depression only, and both somatization and depression). Data were collected from 2001–2003.

Results: Patients who were rated as somatizing were 4.03 (95% CI, 2.52–6.45) times as likely to be rated as depressed as well as somatizing. A comparison of the 4 groups defined by physicians' ratings found that functional status, ethnicity, number of medical conditions, depressive symptoms, and anxiety were statistically significantly different ($P < .05$). Primary care physicians were 3.95 (95% CI, 1.53–10.16) times more likely to identify older black patients as somatizing only versus depressed and somatizing compared to older white patients among patients above a threshold on a standard depression instrument.

Conclusions: Our study fills a gap in the literature by focusing on the primary care physician ratings of depression and somatization, and also specifically on older primary care patients. Blacks are less likely to be rated as depressed, but this may reflect the tendency of doctors to rate them as somatizing.

Prim Care Companion J Clin Psychiatry 2009;11(6):285–291

© Copyright 2009 Physicians Postgraduate Press, Inc.

Submitted: *October 17, 2008; accepted December 16, 2008 (doi:10.4088/PCC.08m00727).*

Corresponding author: *Hillary R. Bogner, MD, MSCE, Department of Family Medicine and Community Health, University of Pennsylvania, 3400 Spruce St, 2 Gates Bldg, Philadelphia, PA 19104 (hillary.bogner@uphs.upenn.edu).*

Somatization, the presentation of medically unexplained symptoms, is very common in primary care. Somatic complaints are the cause of up to half of all primary care visits[1] and result in increased medical care expenditures, utilization of health care resources, disability,[2–5] and reduced quality of life.[6] Findings from community[7,8] and psychiatric settings[9,10] report that increasing age may predict somatization. Somatic presentations of depression are reported to be more common among women, blacks, and persons from lower socioeconomic backgrounds.[11–15] Depression is a common feature of somatization, and, in a majority of cases, the clinical presentation of depression is dominated by somatic symptoms such as headache, constipation, weakness, or general aches and pains.[16,17] Internationally, the percentages of depression with somatic presentation range from 45% to 95% among patients in 14 countries and on 5 continents.[16]

Prior research has noted a close link between somatization and depressive disorders in the elderly,[18] building on the historical view that "masked depression" underlies somatization.[19,20] Researchers have found depression is less likely to be recognized in patients who present with predominantly somatic complaints compared to patients who present with predominantly psychological complaints.[21–23] Primary care physicians frequently explore organic diseases and fail to consider depression as a diagnosis,[24] which may contribute to high rates of unrecognized and untreated depression in primary care,[21,25,26] particularly among the elderly.[27] Primary care physicians may pursue a lengthy investigation of somatic symptoms rather than considering depression as a possible diagnosis.[28]

Our goal was to examine the association between somatization and depression as rated by primary care physicians. In addition, we investigated the characteristics of patients who were identified by the physician as somatizing, depressed, or both depressed and somatizing. Our conceptual framework was a simplified version of the model suggested by Cooper and colleagues (Figure 1).[29] In this model, attitudes and familiarity with the practice influence the relationship between patient characteristics and the identification of depression and/or somatization by primary care physicians.

© Copyright 2009 Physicians Postgraduate Press, Inc. © Copyright 2009 Physicians Postgraduate Press, Inc.

Clinical Points

- Somatic symptoms appear to function as a barrier to the detection of depression.
- Ethnicity plays an important role in the identification and management of depression.
- Clinicians should be aware of the close association of somatic symptoms and depression among older primary care patients.

In our study, we tested 2 hypotheses. The first hypothesis was that primary care physicians would be more likely to identify elderly patients as depressed who were also identified as somatizing. Our second hypothesis was that primary care physicians would be more likely to identify older male patients and older black patients as somatizing only versus depressed and somatizing compared to older female patients and older white patients, respectively, among patients above a threshold on a standard depression instrument. A further understanding of the identification of depression and/or somatization in primary care among older adults is an advantage in designing a mental health intervention appropriate to primary care settings.

METHOD

The Spectrum Survey

The Spectrum Study was an observational study designed to characterize how depression presents among older primary care patients. Details of the study design of the Spectrum Study are available elsewhere.[30,31] In summary, primary care practices recruited from the community provided the venue for sampling older patients. Trained lay interviewers were instructed in screening and interviewing by the study investigators working with Battelle Memorial Institute's Center for Public Health Research and Evaluation located in Baltimore, Maryland.

Participants who agreed to be part of the study were scheduled for an in-home interview that consisted of a 90-minute survey questionnaire. In-home interviews were obtained for 357 people, but 2 persons did not complete the interview, leaving a sample of 355 persons. The study protocols were approved by the Institutional Review Board of the School of Medicine, University of Pennsylvania, Philadelphia, and all participants signed consent forms. Data were collected from 2001–2003.

Physician Assessment of Depression and Somatic Symptoms

Physicians were asked to provide their assessment of the patient's depression at the index visit. Physicians were asked to rate the patient's level of depression on the following 4-point scale: none at all, mild, moderate, or severe. For this investigation, physician identification of depression was defined as including ratings of mild, moderate, and severe. Physicians were also asked to rate the patient's focus on medically unexplained somatic complaints on a 5-point scale: none, a little, somewhat, significant, or a great deal. The presence of somatic symptoms was defined as including ratings of a little, somewhat, significant, or a great deal. Finally, physicians were asked to rate how well they knew the patient (very well, somewhat, or not at all).

Patient Assessment

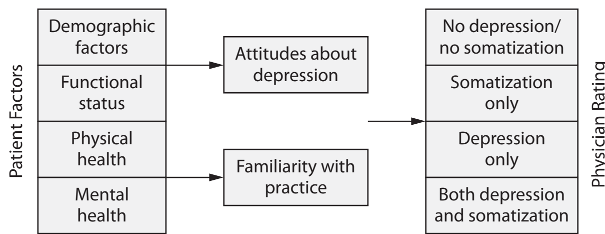
We used standard questions to obtain information from the respondents on age, gender, marital status, self-reported ethnicity, education, and the number of visits made to the practice for medical care within 6 months of the index visit. We asked patients whether they agreed or disagreed with 3 statements about depression and its treatment.[32] The statements were "I believe depression is a medical problem"; "If my doctor told me I had depression, I could accept that"; and "I would take a medicine for depression if my doctor told me to." Questions from the 36-item Medical Outcomes Study Short-Form (SF-36) General Health Survey were used to assess functional status.[33,34] The SF-36 has been employed in studies of outcomes of patient care[33–37] and appears to be reliable and valid even in frail elders.[38]

Baseline medical comorbidity was measured by summing the lifetime presence of chronic diseases or conditions, including myocardial infarction, angina, congestive heart failure, atrial fibrillation, hypertension, diabetes mellitus, osteoarthritis, Parkinson's disease, stroke, and hip fracture. The Centers for Epidemiologic Studies-Depression (CES-D) scale was developed for use in studies of depression in community samples.[39–41] The standard CES-D questionnaire contains 20 items and has been employed in studies of older adults.[42,43] In this study, we employed the CES-D as a continuous score, but we also categorized patients whose CES-D score was 16 and above as depressed.

The Beck Anxiety Inventory (BAI)[44] was developed in order to measure the severity of anxiety symptoms, and it has been shown to be an appropriate instrument for measuring symptoms of anxiety in the elderly. The BAI is a 21-item, self-report instrument designed to minimize the relationship of symptoms of anxiety and depressive

 © Copyright 2009 Physicians Postgraduate Press, Inc. © Copyright 2009 Physicians Postgraduate Press, Inc.

Figure 1. Conceptual Framework of Physician Identification of Somatization and Depression[a]



[a]Adapted with permission from Cooper et al.[29]

symptoms. Total scores range from 0 to 63. The Mini-Mental State Examination (MMSE)[45] is a short standardized mental status examination that has been widely employed for clinical and research purposes. The MMSE has been extensively studied, as reviewed by Tombaugh and McIntyre[46] and by Crum and colleagues.[47]

Analytic Strategy

We carried out our analyses in 2 steps. The first step involved comparing characteristics of patients identified by their physician as (1) no depression/no somatization, (2) somatization only, (3) depression only, and (4) both depression and somatization using χ^2 or 2-tailed *t* tests as appropriate for categorical or continuous data. An α of .05 was used to evaluate statistical significance, recognizing that statistical methods are guides to inference. In the second step, we employed separate multivariate logistic regression models to assess physician ratings of somatizing only compared to somatizing and depressed among patients with a CES-D score > 16. In model 1, we adjusted for age, gender, ethnicity, marital status, level of educational attainment, functional status, and depressive and anxiety symptoms. In model 2, we adjusted for attitudes about depression and its treatment, the number of visits to the practice in the 6 months prior to interview, and the doctors' rating of how well they knew the patient as well as the terms included in model 1. We adjusted for practice-clustering effects by using generalized estimating equations for binary outcomes. Data analysis was performed using SPSS version 12 (SPSS Inc, Chicago, Illinois).

RESULTS

Study Sample

Our study sample included 355 participants who had completed a baseline in-home interview. In all, 14 participants were excluded because of incomplete physician assessments for depression and somatization, leaving a sample size of 341 for this analysis. The age range of our study sample was 65–92 years; 257 of the participants were women (75.4%) and 118 were black (34.6%).

Relationship of Somatization and Depression

Patients who were rated as somatizing were 4.03 (95% CI, 2.52–6.45) times as likely to be rated as depressed as well as somatizing. Black patients who were rated as somatizing were 4.60 (95% CI, 1.94–10.89) times as likely to be rated as depressed as well as somatizing. White patients who were rated as somatizing were 3.94 (95% CI, 2.20–7.09) times as likely to be rated as depressed as well as somatizing.

Patient Characteristics and Physician Identification of Somatization and/or Depression

A comparison of the 4 groups (no depression/no somatization, somatization only, depression only, both depression and somatization) defined by physicians' ratings, ethnicity, number of medical conditions, functional status, depressive symptoms, and anxiety were statistically significantly different. The no depression/no somatization and somatization-only groups had higher proportions of black patients compared to the depression-only and depression and somatization groups. The mean scores on all measures of functional status (physical functioning, role physical, role emotional, social functioning, bodily pain, and general health perception) were higher in the no depression/no somatization and somatization-only groups compared to the depression-only and depression and somatization groups. The depression-only and depression and somatization groups had higher mean numbers of medical conditions, depression scores, and anxiety scores compared to the no depression/no somatization and somatization-only groups (Table 1).

Primary care physicians were 3.95 (unadjusted, 95% CI, 1.53–10.16) times more likely to identify older black patients as somatizing only versus depressed and somatizing compared to older white patients among patients with CES-D scores ≥ 16. In multivariate models that controlled for age, gender, ethnicity, marital status, level of educational attainment, functional status, depressive and anxiety symptoms, attitudes about depression and its treatment, the number of visits to the practice in the 6 months prior to interview, and the doctor's rating of how well they knew the patient, the likelihood of identification as somatizing only in comparison with both somatization and depression increased (adjusted odds ratio = 4.98; 95% CI, 1.64–15.17) among patients with CES-D scores ≥ 16. A significant association was not found between gender and physician identification of somatization only versus both somatization and depression (Table 2).

DISCUSSION

In this community-based primary care sample, patients rated as somatizing were more likely to be rated as depressed as well as somatizing. Our findings indicate that primary care physicians were more likely to identify older

© Copyright 2009 Physicians Postgraduate Press, Inc. © Copyright 2009 Physicians Postgraduate Press, Inc.

Table 1. Characteristics of the Study Sample (stratified by physician identification of depression and/or somatization or neither) Among 341 Patients With Complete Information on Physician Identification of Depression and Somatization at the Index Visit[a]

Characteristic	No Depression/ No Somatization (n=81)	Somatization Only (n=72)	Depression Only (n=41)	Depression and Somatization (n=147)	*P* Value
Sociodemographic					
Age, mean (SD), y	75.2 (6.2)	76.0 (6.2)	75.5 (4.6)	74.7 (5.9)	.49
Women, n (%)	56 (69)	60 (83)	28 (68)	116 (79)	.10
Married or living with partner, n (%)	35 (43)	27 (38)	14 (34)	58 (40)	.79
Less than high school education, n (%)	30 (37)	34 (47)	15 (37)	59 (40)	.57
Black, n (%)	37 (46)	34 (47)	9 (22)	38 (26)	.001*
Attitudes about depression (agreement with statement), n (%)					
I believe depression is a medical problem	57 (70)	59 (82)	29 (71)	109 (74)	.39
If my doctor told me I had depression, I could accept that	66 (82)	65 (90)	33 (81)	134 (91)	.09
I would take medicine for depression if my doctor told me to	69 (85)	63 (88)	37 (90)	133 (91)	.30
Physical health, mean (SD)					
No. of office visits within past 6 mo	3.0 (1.8)	2.8 (3.5)	3.5 (3.9)	3.3 (3.1)	.50
No. of medical conditions	6.5 (3.2)	6.7 (3.1)	8.2 (3.6)	7.8 (3.9)	.01*
Functional status, mean (SD)					
Physical functioning score	64.0 (27.2)	65.1 (28.6)	52.5 (30.6)	53.6 (29.4)	.006*
Role-physical score	51.8 (38.5)	48.2 (43.6)	31.1 (38.6)	40.3 (38.1)	.02*
Role-emotional score	85.6 (31.6)	78.2 (38.0)	77.2 (39.0)	65.6 (41.8)	.002*
Social function score	77.6 (25.2)	74.5 (27.5)	68.3 (33.1)	67.2 (27.1)	.03*
Bodily pain score	59.4 (21.9)	55.9 (23.0)	52.4 (25.2)	50.0 (26.9)	.04*
General health perception score	57.9 (18.5)	55.8 (30.0)	44.9 (20.1)	46.6 (20.3)	<.001*
Cognitive and psychological status, mean (SD)					
MMSE score	27.2 (2.3)	26.6 (3.2)	27.1 (2.4)	27.0 (3.0)	.56
Depression score (CES-D)	10.3 (8.4)	12.2 (11.8)	15.1 (9.5)	18.3 (11.9)	<.001*
Beck Anxiety score	7.6 (7.3)	7.2 (7.6)	8.6 (9.1)	10.8 (8.6)	.02*

[a]Data from the Spectrum Study (2001–2003).
*$P < .05$.
Abbreviations: CES-D=Centers for Epidemiologic Studies-Depression scale, MMSE=Mini-Mental State Examination.

Table 2. Association of Patient Characteristics With Identification of Somatization Only Versus Identification of Somatization and Depression as Reported by Primary Care Physicians for Patients With CES-D Score ≥16 (n=118)[a]

Characteristic	Unadjusted OR (95% CI)	Model 1 OR (95% CI)[b]	Model 2 OR (95% CI)[c]
Comparison of patients identified with somatization only with patients identified with somatization and depression (CES-D score ≥16)			
Black patients (reference group: nonblack)	3.95 (1.53–10.16)	4.24 (1.52–11.79)	4.98 (1.64–15.17)
Female patients (reference group: male patients)	1.00 (0.30–3.38)	0.84 (0.21–3.33)	0.71 (0.15–3.70)

[a]Data from the Spectrum Study (2001–2003).
[b]Model 1 includes terms for age, gender, ethnicity, marital status, level of educational attainment, functional status, and depressive and anxiety symptoms.
[c]Model 2 includes terms for attitudes about depression and its treatment, the number of visits to the practice in the 6 months prior to interview, and the doctors' rating of how well they knew the patient as well as the terms included in Model 1.
Abbreviations: CES-D=Centers for Epidemiologic Studies-Depression scale, OR=odds ratio.

black patients as somatizing only versus depressed and somatizing compared to older white patients among patients above a threshold on a standard depression instrument. The association between patient ethnicity and physician identification of somatization and depression persisted even after controlling for potentially influential variables, including severity of depressive and anxiety symptoms, functional status, medical conditions, and physicians' ratings of how well they knew the patient. A significant association was not found between gender and physician identification of somatization only versus both somatization and depression. Our study adds to the literature examining the role of ethnicity in the identification and management of mental illness.[29,48–53]

Before discussing our findings, the limitations of our study deserve comment. First, we obtained our results only from primary care sites in Maryland, whose patients may not be representative of most primary care practices. However, these practices were not academically affiliated and are probably similar to other practices in the country. Second, there is the potential for the sources of error associated with retrospective interview data including imperfect recall and response. Third, the survey instruments used in the study do not necessarily reflect the actual interaction

 © Copyright 2009 Physicians Postgraduate Press, Inc. © Copyright 2009 Physicians Postgraduate Press, Inc.

the patient had with the physician when the patient was assessed by the physician. We do not know if there are ethnic differences in symptom expression during the doctor-patient encounter, and we do not have supplemental ratings of patient behavior or symptoms from other health care workers.

Nevertheless, despite limitations, our study warrants attention because we attempted to address the relationship between the identification of somatization and depression in relation to patient-level factors, while adjusting our estimates of association for demographic factors, functional impairment, psychopathology, medical conditions, and the physicians' ratings of how well they knew the patient. In addition, because we examined a community-based primary care sample, the results may be generalizable to older adults in primary care settings, which may help facilitate identification and treatment of somatic complaints and depression in the future.

Our study differs from others on identification of depression by primary care physicians in several ways. First, our analysis was based on an ethnically diverse sample in contrast to studies in which the patients were predominantly white.[54,55] Second, our study focused exclusively on patients over the age of 65 years in primary care settings.[56] Third, we were able to link the patient data to reports of physician identification of depression and somatization simultaneously within 6 months of interview. We did not have to depend on chart reviews. In summary, our study fills a gap in the literature by focusing on the primary care physician ratings of depression and somatization and also specifically on older primary care patients.

No known studies have focused on older adults to assess the relationship between patient characteristics and the identification of somatization and depression. Gallo et al[49] found that black patients aged 65 years and older were less likely to be identified as depressed and their depression was less likely to be actively managed than older white patients. We acknowledge that race and ethnic origin are crude markers of complex social and behavioral patterns and that designations of ethnicity imply a homogeneity of groups, which is an oversimplification. Ethnicity refers to a common heritage shared by a particular group,[57] and, consistent with the National Institutes of Health and current research, we use the terms *black* to include individuals of African, African American, and African Caribbean descent and *white* to include individuals of European descent. Our findings indicate that primary care physicians were 4 times more likely to identify older black patients as somatizing only versus depressed and somatizing compared to older white patients among patients with clinically significant depression (CES-D score ≥ 16). The presentation of depression in blacks has previously been found to be more likely to include physical symptoms.[13,58]

The Institute of Medicine (IOM) report *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*[59] called attention to disparities in the treatment of illness and delivery of care across ethnic groups, including mental illness. Despite these findings, few studies have focused on the patient-physician encounter to elucidate the mechanisms resulting in these startling disparities.[49] Sleath and colleagues[60] found that physicians were more likely to minimize emotional symptoms of blacks than of whites, which led to lower treatment rates for blacks. Cooper-Patrick et al[56] found that black patients rated their office visits as less participatory than did white patients. To supplement our findings, further research is needed to clarify the underlying differences in presentation of depression and communication style between primary care providers and patients from various ethnic groups.

Our results are not wholly consistent with our hypotheses. Although somatization as well as depression has been found to be more common among women,[11,12] no significant association was found between gender and physician identification of somatization only versus both somatization and depression. Somatic symptoms appear to function similarly as a barrier to the detection of depression in both men and women. Somatic complaints may impede depression identification by competing for the attention and time of the physicians,[61] especially if a lengthy investigation of somatic symptoms is carried out.[28] Patients and physicians may erroneously believe there is no reason to initiate depression treatment, although data indicate that treatment with antidepressants can improve outcomes.[62,63] The patient-related and physician-related barriers to the detection of depression among men and women with somatic symptoms may be similar.

Findings from our study have implications for enhanced medical education and practice. With greater awareness of biases in the diagnosis of somatization in comparison with depression and somatization among blacks, primary care physicians can begin to explore modification in treatment and care, namely patient-physician communication, which may eventually lead to improved care outcomes. We acknowledge that the recognition and management of somatization and depression in primary care settings is a complex process that is influenced by multiple factors on all levels of analysis: provider, patient, practice, systemic, and policy. Further research is needed to elucidate the mechanisms resulting in ethnic disparities in the care of somatization and depression. In the meantime, physicians who care for older patients from diverse backgrounds should be aware of the close association of somatic symptoms and depression.

Author affiliations: Department of Family Medicine and Community Health, University of Pennsylvania (Dr Bogner and Ms de Vries) and School of Medicine, Drexel University (Ms Shah), Philadelphia.
Potential conflicts of interest: None reported.
Funding support: The Spectrum Study was supported by grants MH62210-01, MH62210-01S1, and MH67077 from the National Institute of Mental Health (NIMH). Dr Bogner was supported by an NIMH-mentored Patient-Oriented Research Career Development

© Copyright 2009 Physicians Postgraduate Press, Inc. © Copyright 2009 Physicians Postgraduate Press, Inc.

Award (MH67671-01), an American Heart Association Grant-in-Aid, and a Penn Minority Aging Research for Community (MARCH) Center Pilot Research Award.

REFERENCES

1. Katon WJ, Walker EA. Medically unexplained symptoms in primary care. *J Clin Psychiatry.* 1998;59(suppl 20):15–21.
2. Barsky AJ, Orav EJ, Bates DW. Somatization increases medical utilization and costs independent of psychiatric and medical comorbidity. *Arch Gen Psychiatry.* 2005;62(8):903–910.
3. Fink P, Sorensen L, Engberg M, et al. Somatization in primary care: prevalence, health care utilization, and general practitioner recognition. *Psychosomatics.* 1999;40(4):330–338.
4. Smith GR Jr. The course of somatization and its effects on utilization of health care resources. *Psychosomatics.* 1994;35(3):263–267.
5. Kroenke K, Spitzer RL, deGruy FV 3rd, et al. Multisomatoform disorder: an alternative to undifferentiated somatoform disorder for the somatizing patient in primary care. *Arch Gen Psychiatry.* 1997;54(4):352–358.
6. Sheehan B, Lall R, Bass C. Does somatization influence quality of life among older primary care patients? *Int J Geriatr Psychiatry.* 2005;20(10):967–972.
7. Wittchen HU, Essau CA, von Zerssen D, et al. Lifetime and six-month prevalence of mental disorders in the Munich Follow-up Study. *Eur Arch Psychiatry Clin Neurosci.* 1992;241(4):247–258.
8. Gureje O, Simon GE, Ustun TB, et al. Somatization in cross-cultural perspective: a World Health Organization study in primary care. *Am J Psychiatry.* 1997;154(7):989–995.
9. Wittenborn JR, Buhler R. Somatic discomforts among depressed women. *Arch Gen Psychiatry.* 1979;36(4):465–471.
10. Lyness JM, Caine ED, Conwell Y, et al. Depressive symptoms, medical illness, and functional status in depressed psychiatric inpatients. *Am J Psychiatry.* 1993;150(6):910–915.
11. Nimnuan C, Hotopf M, Wessely S. Medically unexplained symptoms: an epidemiological study in seven specialities. *J Psychosom Res.* 2001;51(1):361–367.
12. Nimnuan C, Rabe-Hesketh S, Wessely S, et al. How many functional somatic syndromes? *J Psychosom Res.* 2001;51(4):549–557.
13. Brown C, Schulberg HC, Madonia MJ. Clinical presentations of major depression by African Americans and whites in primary medical care practice. *J Affect Disord.* 1996;41(3):181–191.
14. Carter JH. Recognizing psychiatric symptoms in black Americans. *Geriatrics.* 1974;29(11):95–99.
15. Adebimpe VR. Overview: white norms and psychiatric diagnosis of black patients. *Am J Psychiatry.* 1981;138(3):279–285.
16. Simon GE, VonKorff M, Piccinelli M, et al. An international study of the relation between somatic symptoms and depression. *N Engl J Med.* 1999;341(18):1329–1335.
17. Johnson J, Weissman MM, Klerman GL. Service utilization and social morbidity associated with depressive symptoms in the community. *JAMA.* 1992;267(11):1478–1483.
18. Sheehan B, Banerjee S. Review: somatization in the elderly. *Int J Geriatr Psychiatry.* 1999;14(12):1044–1049.
19. Goldfarb AI. Masked depression in the old. *Am J Psychother.* 1967;21(4):791–796.
20. Salzman C, Shader RI. Depression in the elderly, 1: relationship between depression, psychologic defense mechanisms and physical illness. *J Am Geriatr Soc.* 1978;26(6):253–260.
21. Kirmayer LJ, Robbins JM, Dworkind M, et al. Somatization and the recognition of depression and anxiety in primary care. *Am J Psychiatry.* 1993;150(5):734–741.
22. Magruder-Habib K, Zung WW, Feussner JR. Improving physicians' recognition and treatment of depression in general medical care: results from a randomized clinical trial. *Med Care.* 1990;28(3):239–250.
23. Tylee A, Gandhi P. The importance of somatic symptoms in depression in primary care. *Prim Care Companion J Clin Psychiatry.* 2005;7(4):167–176.
24. Barsky AJ, Goodson JD, Lane RS, et al. The amplification of somatic symptoms. *Psychosom Med.* 1988;50(5):510–519.
25. US Department of Health and Human Services. *Mental Health: A Report of the Surgeon General: Older Adults and Mental Health*. Rockville, Maryland: US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health; 1999.
26. Aragones E, Pinol JL, Labad A, et al. Detection and management of depressive disorders in primary care in Spain. *Int J Psychiatry Med.* 2004;34(4):331–343.
27. Wijeratne C, Brodaty H, Hickie I. The neglect of somatoform disorders by old age psychiatry: some explanations and suggestions for future research. *Int J Geriatr Psychiatry.* 2003;18(9):812–819.
28. Schulberg HC, McClelland M. A conceptual model for educating primary care providers in the diagnosis and treatment of depression. *Gen Hosp Psychiatry.* 1987;9(1):1–10.
29. Cooper LA, Gonzales JJ, Gallo JJ, et al. The acceptability of treatment for depression among African-American, Hispanic, and white primary care patients. *Med Care.* 2003;41(4):479–489.
30. Gallo JJ, Bogner HR, Straton JB, et al. Patient characteristics associated with participation in a practice-based study of depression in late life: the Spectrum Study. *Int J Psychiatry Med.* 2005;35(1):41–57.
31. Bogner HR, Wittink M, Merz JF, et al. Personal characteristics of older primary care patients who provide a buccal swab for APOE testing and banking of genetic material: the Spectrum Study. *Community Genet.* 2004;7(4):202–210.
32. Cooper-Patrick L, Powe NR, Jenckes MW, et al. Identification of patient attitudes and preferences regarding treatment of depression. *J Gen Intern Med.* 1997;12(7):431–438.
33. Stewart AL, Ware JE, eds. *Measuring Functioning and Well-Being*. Durham, NC: Duke University Press; 1993.
34. McHorney CA. Measuring and monitoring general health status in elderly persons: practical and methodological issues in using the SF-36 Health Survey. *Gerontologist.* 1996;36(5):571–583.
35. Stewart AL, Hays RD, Ware JE. The MOS Short-Form General Health Survey: reliability and validity in a patient population. *Med Care.* 1988;26(7):724–735.
36. Stewart AL, Greenfield S, Hays RD, et al. Functional status and well-being of patients with chronic conditions: results from the Medical Outcomes Study. *JAMA.* 1989;262(7):907–913.
37. Wells KB, Stewart A, Hays RD, et al. The functioning and well-being of depressed patients: results from the Medical Outcomes Study. *JAMA.* 1989;262(7):914–919.
38. Stadnyk K, Calder J, Rockwood K. Testing the measurement properties of the Short Form-36 Health Survey in a frail elderly population. *J Clin Epidemiol.* 1998;51(10):827–835.
39. Radloff LS. The CES-D scale: a self-report depression scale for research in the general population. *Appl Psychol Meas.* 1977;1:385–401.
40. Comstock GW, Helsing KJ. Symptoms of depression in two communities. *Psychol Med.* 1976;6(4):551–563.
41. Eaton WW, Kessler LG. Rates of symptoms of depression in a national sample. *Am J Epidemiol.* 1981;114(4):528–538.
42. Newmann JP, Engel RJ, Jensen J. Changes in depressive-symptom experiences among older women. *Psychol Aging.* 1991;6(2):212–222.
43. Gatz M, Johansson B, Pedersen N, et al. A cross-national self-report measure of depressive symptomatology. *Int Psychogeriatr.* 1993;5(2):147–156.
44. Beck AT, Epstein N, Brown G, et al. An inventory for measuring clinical anxiety: psychometric properties. *J Consult Clin Psychol.* 1988;56(6):893–897.
45. Folstein MF, Folstein SE, McHugh PR. "Mini-Mental State": a practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res.* 1975;12(3):189–198.
46. Tombaugh TN, McIntyre NJ. The Mini-Mental State Examination: a comprehensive review. *J Am Geriatr Soc.* 1992;40(9):922–935.
47. Crum RM, Anthony JC, Bassett SS, et al. Population-based norms for the Mini-Mental State Examination by age and educational level. *JAMA.* 1993;269(18):2386–2391.
48. Wang PS, Berglund P, Kessler RC. Recent care of common mental disorders in the United States: prevalence and conformance with evidence-based recommendations. *J Gen Intern Med.* 2000;15(5):284–292.
49. Gallo JJ, Bogner HR, Morales KH, et al. Patient ethnicity and the identification and active management of depression in late life. *Arch Intern Med.* 2005;165(17):1962–1968.
50. Blazer DG, Hybels CF, Simonsick CF, et al. Marked differences in antidepressant use by race in an elderly community sample: 1986–1996.

© Copyright 2009 Physicians Postgraduate Press, Inc. © Copyright 2009 Physicians Postgraduate Press, Inc.

Am J Psychiatry. 2000;157(7):1089–1094.
51. Gallo JJ, Cooper-Patrick L, Lesikar S. Depressive symptoms of whites and African Americans aged 60 years and older. *J Gerontol B Psychol Sci Soc Sci.* 1998;53(5):P277–P286.
52. Young AS, Klap R, Sherbourne C, et al. The quality of care for depressive and anxiety disorders in the United States. *Arch Gen Psychiatry.* 2001(1);58:55–61.
53. Comino EJ, Silove D, Manicavasagar V, et al. Agreement in symptoms of anxiety and depression between patients and GPs: the influence of ethnicity. *Fam Pract.* 2001;18(1):71–77.
54. Klinkman MS, Coyne JC, Gallo S, et al. False positives, false negatives, and the validity of the diagnosis of major depression in primary care. *Arch Fam Med.* 1998;7(5):451–461.
55. Fyffe DC, Sirey JA, Heo M, et al. Late-life depression among black and white elderly homecare patients. *Am J Geriatr Psychiatry.* 2004;12(5): 531–535.
56. Cooper-Patrick L, Gallo JJ, Gonzales JJ, et al. Race, gender, and partnership in the patient-physician relationship. *JAMA.* 1999;282(6):583–589.
57. Zenner W. Ethnicity. In: Levinson D, Ember M, eds. *Encyclopedia of Cultural Anthropology*. New York, NY: Holt; 1996:393–395.
58. Das AK, Olfson M, McCurtis HL, et al. Depression in African Americans: breaking barriers to detection and treatment. *J Fam Pract.* 2006;55(1):30–39.
59. Smedley BD, Stith AY, Nelson AR. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC: National Academies Press; 2003.
60. Sleath B, Svarstad B, Roter D. Patient race and psychotropic prescribing during medical encounters. *Patient Educ Couns.* 1998;34(3):227–238.
61. Klinkman MS. Competing demands in psychosocial care: a model for the identification and treatment of depressive disorders in primary care. *Gen Hosp Psychiatry.* 1997;19(2):98–111.
62. Kroenke K. Somatoform disorders and recent diagnostic controversies. *Psychiatr Clin North Am.* 2007;30(4):593–619.
63. O'Malley PG, Jackson JL, Santoro J, et al. Antidepressant therapy for unexplained symptoms and symptom syndromes. *J Fam Pract.* 1999;48(12):980–990.

© Copyright 2009 Physicians Postgraduate Press, Inc.