Knowledge and Attitudes About Depression Among Non-generalists and Generalists

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BACKGROUND. The purpose of this study was to learn more about barriers to managing depression by comparing knowledge and attitudes about depression among physicians, internists, obstetrician-gynecologists, and a reference group of psychiatrists. Among the non-psychiatrists, we hypothesized that generalist physicians would have more favorable attitudes and greater knowledge about depression than non-generalists.

METHODS. Survey questionnaires were sent to resident and faculty physicians (N=375) of two university-affiliated medical centers. The physicians were classified as non-generalists (medicine subspecialists, transitional year interns, and obstetrician-gynecologists), generalists (general internists and family physicians), and psychiatrists. A 33-item written questionnaire assessed knowledge and three attitudinal dimensions: attitudes attributed by physicians to patients; physicians' confidence in managing depression; and physicians' psychosocial orientation. A knowledge scale and an attitudes scale were scored by adding the number of knowledge items answered correctly and the more favorable attitudinal responses. Multivariable regression was used to identify physician characteristics among non-generalists and generalists associated with higher knowledge and attitudinal scores.

RESULTS. Response rate was 82%. Sixty percent of the respondents were male, 63% were resident physicians, and 14% had advanced psychosocial training. Non-generalists and generalists had similar demographic characteristics, but psychiatrists were significantly more experienced. Psychiatrists had the most favorable attitudes, followed by generalists and non-generalists. Compared with non-generalists, generalists were more confident in prescribing antidepressants (62% vs 25%), more likely to report that treating depression is rewarding (71% vs 39%), and less likely to refer to a psychiatrist (58% vs 79%). Generalist classification, increased experience, and higher levels of psychosocial training were associated with more favorable attitudes. Knowledge scores were significantly higher for psychiatrists than for non-generalists and generalists. Among non-psychiatrists, correct responses for knowledge items were: treatment efficacy (61%), treatment duration (59%), ≥5 DSM-III-R criteria (52%), and prevalence of depression (30%). Among those with incorrect responses, both non-generalists and generalists overestimated the prevalence (52%) and underestimated the efficacy of drug therapy (30%).

CONCLUSIONS. Generalists and non-generalists have similar and relatively good basic knowledge about depression. Misperceptions about treatment efficacy, and attitudinal barriers, particularly among non-generalists, may compromise the physician's ability to diagnose and manage depression.

KEY WORDS. Depression; knowledge, attitudes, practice; physicians, family. *(J Fam Pract 1997; 44:161-168)*

Depressive disorders are common, recurring conditions among primary care patients. They cause substantial suffering for patients and their families, are associated with lost productivity, and markedly increase the risk of suicide. Further, the presence of depression puts persons with comorbid medical conditions, such as coronary heart disease, at increased risk of death. Persons with depression make more physician visits and utilize more health care resources than persons without depression.[1-4] The estimated health care cost associated with major depression in the United States is estimated to be $43.7 billion annually.[5]

Despite the impact of depression, primary care providers often fail to diagnose and treat adequately as many as 35% to 50% of patients with depressive disorders.[6,7] Physician knowledge and attitudes,

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poor reimbursement mechanisms, time constraints in busy office practices, and competing comorbid illness and patient priorities may be important obstacles to high-quality care for depression. Although a comprehensive model of diagnostic and treatment barriers has not been examined, prior research has shown general practitioners and medical residents to have limited knowledge of formal diagnostic criteria for depression. Several studies among generalist physicians have shown that negative attitudes toward mental illness and little interest in psychosocial issues are associated with decreased recognition of depression.[8-10] This study seeks to build upon this literature by comparing the importance of these obstacles between generalist physicians and non-generalist physicians who are assuming an expanded role as primary care providers. Specifically, we hypothesized that generalists would have more favorable attitudes and greater knowledge about depression than non-generalists.

METHODS

SUBJECTS

The study was conducted at two university-affiliated medical centers, the University of Texas Health Science Center at San Antonio (UTHSCSA) and the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Maryland. At UTHSCSA, the following groups were included: all residents and faculty physicians from family practice, psychiatry, and obstetrics-gynecology; all residents in internal medicine; and a random sample of faculty physicians in internal medicine and its subspecialties. At USUHS, only internal medicine residents were included.

The subjects were classified beforehand as non-generalists, generalists, and psychiatrists. The non-generalists included faculty and resident obstetrician-gynecologists, medicine residents completing a 1-year transitional internship with future plans to specialize, faculty medicine subspecialists, and medicine residents with plans for subspecialty careers. Generalists included faculty physicians in family practice or general internal medicine, family practice residents, and medicine residents planning careers as general internists. To further examine the performance of these non-psychiatrists, faculty psychiatrists and residents training in psychiatry, who were expected to be more knowledgeable and have more favorable attitudes about depression than the non-psychiatrists, were included as a reference group.

QUESTIONNAIRE DESIGN AND ADMINISTRATION

The questionnaire (Appendix) was based on previously validated instruments that assess physician attitudes and characteristics associated with the recognition of depression.[9] Additional questions were adapted from descriptive studies of physician characteristics that we hypothesized would influence their diagnostic ability.[10-16] The questionnaire also contained items to measure physician knowledge of the diagnosis and treatment of depression; correct answers were based on guidelines published by the Agency for Health Care Policy and Research.[17,18] Questions were refined after pilot testing with faculty and resident physicians who were not eligible to participate in the study.

We hypothesized at the outset that two scales would influence physician diagnostic ability. These scales were physician attitude (Appendix, Attitudes items), and physician knowledge (Appendix, Knowledge items). A multiple groups component confirmatory factor analysis was used to evaluate our two-factor model for scoring the knowledge and attitude items, using the primary physician data.[19] Communality estimates and factor structure coefficients were used to assess item quality and item fit with the domains specified in advance; items with communality estimates <0.30 were excluded from the scale. The overall fit of the model to the data is measured by the proportion of variance accounted for by the predetermined assignment of items to domains and the root mean square residual for the specified factors.[20]

Fourteen of the original 19 knowledge and attitude items had acceptable levels of variability and reliability to be used in factor analysis. Our initial two-factor model representing knowledge (4 items) and attitude (10 items) as separate factors did not provide a good fit to the data (variance explained by the model = 36%; maximum variance explainable = 48%; mean square residual = 0.19). Inspection of item content and residual correlations suggested that the attitude factor should be further subdivided into three separate attitude subscales: (1) attitudes attributed to patients by physicians (5 items); (2) physicians' confidence in treating depression (3

items); and (3) physicians' psychosocial orientation (2 items). A model using this four-factor structure (knowledge plus 3 attitude subscales) accounted for 55.1% of the total variance. Given the data, a four-factor model can account for a maximum of 60.4% of the total variance, and a random four-factor model accounts for 47% of the total variance. The root mean square residual is 0.11, indicating a moderate fit of our model to the data. This four-factor model is used as the organizing framework for subsequent results.

The final questionnaire had 33 items, containing a section on demographics and practice characteristics plus one knowledge scale and three attitude subscales, as listed in the Appendix. The range of the knowledge scale scores was 0 to 4, and of the attitude scale scores 0 to 10. The attitude subscales and the knowledge scale were scored by summing the appropriate items. The overall attitude score was the sum of the 10 items in the three attitude subscales. Knowledge of the depression criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition–Revised* (DSM-III-R)[21] was considered adequate if the respondent knew at least five of the nine criteria.

The questionnaire was administered between June and September, 1994. Questionnaires were usually delivered in person to resident physicians and delivered through the mail to faculty physicians. Nonresponding residents were personally contacted. Faculty physicians received a follow-up post card and a second questionnaire. Residents who completed the questionnaire were entered into a lottery to receive a $100 certificate for any education purchase.

TABLE 1

Characteristics of Physicians in Depression Study

Physician Characteristics	Non-generalists (n=96)	Generalists (n=138)	Psychiatrists (n=72)
Years postgraduation, no. *	4 [2, 11] †	3 [2, 8]	10.5 [3, 22.5]
Male sex, %	59	62	58
Ethnic background, % *			
White	67	59	81
Hispanic	17	23	17
Other	14	18	2
Training level, % *			
PGY-1	21	18	10
PGY-2	16	26	17
PGY-3	21	29	11
PGY-4	6	0	4
Faculty	36	27	58
Increased psychosocial training, % *	5	19	100
Family /friend diagnosed or treated for depression, %	40	47	65
Personal symptoms of depression, %	57	61	58
Personal diagnosis or treatment of depression, % ‡	7	13	20

* $P < .05$ for between-group differences.
†Values given are median and interquartile range.
‡Question not included for internal medicine residents at UTHSCSA. Therefore, n= 59 for non-generalists; n = 87 for generalists; and n = 72 for psychiatrists.

Statistical Analysis

Descriptive results are reported as medians and frequencies. Groups were compared using the chi-square statistic for unordered categorical data and the Wilcoxon statistic for ordered categorical or non-normal continuous data.[22] For the non-psychiatrists, a multivariable analysis was performed to identify physician characteristics associated with higher knowledge and attitudes scores using polytomous logistic regression for outcomes with ordinal responses and least squares regression for continuous responses.[23,24]

RESULTS

Physician Characteristics

Of 375 physicians surveyed, 306 (82%) returned completed questionnaires. Ninety-six (31%) were non-generalists, 138 (45%) were generalists, and 72 (24%) were psychiatrists. Non-generalists comprised 63% medicine subspecialists and 37% obstetrician-

gynecologists, and generalists were 60% general medicine internists and 40% family physicians. Respondents were more likely to be residents (95% vs 63% for faculty), and generalists (93% vs 74% for non-generalists and psychiatrists). Among respondents, psychiatrists were significantly more experienced, more likely to be white, and more likely to have a friend or family member diagnosed with depression (Table 1). Non-generalists and generalists did not differ on important demographic characteristics. Overall, 14% of the non-psychiatrists reported extra psychiatric or psychosocial training through clinical electives during medical training or workshops. A large number of the subjects reported being bothered by symptoms of depression; 14% reported a diagnosis or treatment for depression.

Attitudes

Overall attitudes differed significantly between the three groups, with psychiatrists having the most favorable attitudes (overall attitudes [OA] median score = 8, interquartile range 7 to 9), followed by generalists (OA = 6, interquartile range 4 to 7), then non-generalists (OA = 4, interquartile range 3 to 5, Table 2). The largest difference between generalists and non-generalists was found in the physician confidence and satisfaction subscale. Generalists were more confident in their ability to prescribe antidepressants (62% vs 25%), were more likely to report that treating depression is rewarding (71% vs 39%), and were less likely to prefer treating depression by referral to a psychiatrist (58% vs 79%).

In the subscale of "Attitudes attributed by physicians to patients," generalists and non-generalists had similar responses. In both groups, over 40% of respondents thought depressed patients cause their illness to persist, and that depressed patients exaggerate their symptoms. More than 50% of non-psychiatrists perceived patients as being receptive to the diagnosis of depression, and almost 75% perceived patients as receptive to taking antidepressant medication.

Knowledge

Psychiatrists were more knowledgeable about the diagnosis and treatment of depression than generalists and non-generalists (Table 3). The non-generalists and generalists had similar knowledge of the criteria for major depression, the prevalence of depression, the minimum duration of antidepressant treatment, and the efficacy of antidepressant treatment. Among the non-psychiatrists, physicians were equally likely to overestimate (22% of respondents) as underestimate (19%) the minimum recommended duration of treatment. Both non-generalists and generalists, however, were more likely to overestimate (52% of respondents) than underestimate (17%) the prevalence of major depression, and were more likely to underestimate (30%) than overestimate (9%) the efficacy of antidepressant therapy ($P < .05$).

Among non-generalists and generalists, the most frequently omitted DSM-III-R symptoms of major depression were: psychomotor symptoms (20%), poor concentration (30%), decreased energy (34%), feelings of worthlessness or guilt (36%), and thoughts of death or suicide (45%).

Multivariable Analysis

A multivariable analysis (restricted to non-psychiatrists) was performed to identify physician characteristics that were associated with increased knowledge, more favorable overall attitudes, and the combination of knowledge and attitudes. No physician characteristics were associated with increased knowledge. Generalist orientation, increasing years of experience, and high levels of psychosocial training were associated with both more favorable overall attitudes and a higher score on the combined knowledge and attitudes scale.

DISCUSSION

Depression represents a prototypical biopsychosocial illness that is highly prevalent in primary care. It causes substantial suffering for patients, is associated with increased health care costs, and markedly increases the risk for suicide. Most patients with depression are cared for in the primary care setting.[25,26] Prior research has identified attitudinal and knowledge barriers to recognition and treatment among family physicians and general internists, two traditional providers of primary care. We sought to build on this literature by studying whether attitudes about and knowledge of diagnosis and treatment differ between traditional primary care providers and non-traditional primary care providers.

We found that non-generalists had significantly lower attitude scores than generalists and that both groups were lower than the reference group of psy-

TABLE 2

Attitudes About Depression

	Non-generalists (%)	Generalists (%)	Psychiatrists (%)
Attitudes Attributed by Physicians to Patients			
Depression is understandable	93	89	66
Depressed patients cause illness to persist	46	42	18
Depressed patients exaggerate symptoms	40	41	7
Depressed patients are receptive to diagnosis	57	60	88
Depressed patients are receptive to antidepressant medication	71	76	85
Subscale score (0-5)	3 [2, 3.8]*	3 [2, 4]	4 [3, 4]
Physician Confidence and Satisfaction			
Confident in ability to prescribe antidepressants	25	62	94
Treating depression is rewarding	39	71	99
Prefer to refer depressed patients to psychiatrist	79	58	0
Subscale score (0-3)	0.5 [0, 1]	2 [1, 3]	3 [3, 3]
Physician Psychosocial Orientation			
Depression is stigmatizing	43	49	47
Prioritize other medical problems first	69	58	28
Overall Attitudes score (0-10)	4 [3, 5]	6[4, 7]	8 [7, 9]

*Values given are median and interquartile range.

chiatrists. These differences were most apparent in the physician confidence and satisfaction subscale. Compared with non-generalists, generalists were more confident in prescribing antidepressants, found treating depression more rewarding, and were less likely to prefer referral to a psychiatrist. The higher levels of confidence among generalists may reflect greater experience in treating depression and changes in primary care residencies that have increased training in doctor-patient communication and the management of mental health disorders. Indeed, our multivariable results are consistent with other studies showing that experience and psychosocial training are associated with more positive attitudes.[27-29] Guidelines for training in obstetrics-gynecology have been revised recently to place increased emphasis on skills in the psychosocial aspects of medicine. This focus will be important for obstetrics-gynecology residency programs and for subspecialists who are retraining as primary care providers.

Attitudes attributed to patients by physicans were similar between non-generalists and generalists. Encouragingly, few physicians felt that patients were responsible for causing their depression. A large minority of the non-psychiatrists felt that depressed patients caused their illness to persist, however, and that they exaggerated their symptoms. Prior research has shown that a tendency to blame patients for causing and maintaining their depres-

TABLE 3

Physician Knowledge About Depression

Subject of Question	Non-generalists (%)	Generalists (%)	Psychiatrists (%)
DSM-III-R symptoms (listed ≥ 5)	45	56	89
Prevalence of major depression	34	27	—
Minimum duration of treatment with antidepressant medications	57	60	68
Efficacy of antidepressant medication	60	61	81
Summary score	2 [1, 3]*	2 [1.3, 3]	4 [3, 4]
Summary of knowledge and attitudes	6 [5, 8]	8 [5.6, 9]	12 [10, 13]

*Values given are median and interquartile range.

sion is associated with physicians who make fewer psychosocial assessments and are less accurate in detecting psychiatric illness.[9] Over 90% of the non-generalists thought depression was understandable given the patient's medical and social situation. In an article by Callahan and colleagues,[11] 73% of the physicians surveyed also felt depression was understandable in their patient population. This attitude may pose a significant barrier to the diagnosis and treatment of depression. These findings suggest that educational interventions directed at physicians should include information on the etiology of depression, and the high rates of relapse and chronicity. In contrast to attitudes about causality, over one half of respondents perceived patients as being receptive to the diagnosis of depression and almost three fourths thought patients were receptive to treatment with antidepressant medication. These data may reflect a greater public acceptance of mental illness and the introduction of antidepressants with fewer side effects. In an earlier study, almost two thirds of family physicians cited receptivity to diagnosis and treatment as a barrier to care.[30]

Another potential barrier to high-quality care for depressed patients is lack of knowledge. In our sample, basic knowledge about the diagnosis and treatment of depression was relatively good. All physician groups were aware that depression is common; most non-psychiatrists (52%) overestimated its prevalence. In addition to an awareness of its high prevalence, knowledge of the diagnostic criteria is an important component for accurate diagnosis.[31] Over one half of respondents listed at least five criteria for depression from the DSM-III-R, the minimum number of symptoms to diagnose major depression. Knowledge of formal depression criteria did not differ between non-psychiatrists and was greater than reported in prior studies of internal medicine residents and Australian general practitioners.[32,33] Although overall knowledge of the diagnostic criteria was good, three of the most common symptoms of depression, ie, psychomotor changes, impaired concentration, and preoccupation with death or suicide, were the most frequently omitted. Interestingly, thoughts of death or suicide was the most frequently omitted criterion in two other studies of depression knowledge, and may reflect a diagnostic approach that emphasizes the overall impression rather than the specific criteria.[32,33] The recognition of depression may be enhanced by targeted teaching of these symptoms. Finally, over 60% of respondents accurately cited the efficacy of antidepressant medication. Of those with incorrect responses, both non-generalists and generalists were more likely to underestimate (30%) than overestimate (9%) the efficacy of drug therapy. Misperceptions about treatment efficacy may discourage physicians from treating depression.

This study has important implications for training primary care physicians, but its limitations should be considered when reviewing these results. First, the factor structure of the study questionnaire provided only a modestly good fit to the data. Further, the questionnaire's brevity encouraged a high response rate but limited our ability to study certain attitudinal dimensions and knowledge in greater depth. A more robust instrument might have shown additional attitudinal barriers or differences in knowledge. Second, these data come primarily from two institutions and are representative only of resident and academic physicians. Replication at other academic

centers and in community settings are needed. Finally, attitudinal and knowledge barriers do not represent a comprehensive model of barriers to mental health services in primary care. Physician knowledge and attitudes, the practice environment, patient priorities, and reimbursement may all have important effects on the care of patients with depression. Our results on knowledge and attitudes should be considered in this broader context.

CONCLUSIONS

These data show that generalists and non-generalists have similar and relatively good basic knowledge about depression. Attitudinal barriers, particularly lower satisfaction and confidence, may compromise the non-generalist's ability to manage depression. Misperceptions about treatment efficacy and the omission of high prevalence DSM-III-R symptoms were the most common and important knowledge deficits. In the light of increasing pressures on non-psychiatrists to manage depression, these findings should encourage training programs for primary care physicians to include psychosocial training in their curriculum and adequate management experiences with depressed patients.

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APPENDIX

ATTITUDES

Attitudes Attributed to Patients by Physicians Subscale

1. Given the medical and social conditions of many of my patients, depression is understandable.
2. In your office, the typical depressed patient causes the illness to persist.
3. The typical depressed patient exaggerates the symptoms.
4. Most patients are receptive to the diagnosis of depression
5. Most patients are receptive to taking antidepressant medication.

Physician Confidence and Satisfaction Subscale

6. I have confidence in my ability to prescribe antidepressant medication.
7. Treating depressed patients is an aspect of practicing medicine that I find rewarding.
8. Do you prefer to refer non-suicidal patients with major depression to a psychiatrist?

Psychosocial Orientation Subscale

9. Assigning a psychiatric diagnosis to a patient is stigmatizing.
10. My priority is to treat medical problems first, then investigate psychological/psychosocial problems.

The following questions are deleted because they did not load on an identified factor:

Most patients are receptive to receiving counseling for depression.

The typical depressed patient is responsible for causing the illness.

I have confidence in my ability to counsel patients with medication.

KNOWLEDGE

1. Please list as many of the major DSM-III-R criteria for depression as you can.

2. In my medicine clinic, the prevalence of major depression is probably:

(a) Less than 5%
(b) 6%-10%*
(c) 11%-15%
(d) 16%-20%
(e) 21%-50%
(f) 51%-100%

3. In treating major depression, antidepressants should be continued for at least:

(a) 1 month
(b) 4 months
(c) 6 months
(d) 8 months
(e) 12 months

4. In clinical trials, about one third of patients with major depression respond to placebo. The following percentage of patients respond to antidepressants:

(a) 45%
(b) 55%
(c) 65%
(d) 75%
(e) 85%

* Boldface type denotes responses accepted as correct.