Identifying Patients With Depression in the Primary Care Setting

A More Efficient Method

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Objective: To determine if there is a core subset of depressive symptoms that could be used to efficiently diagnose depression after administering the 2-item PRIME-MD a screening questionnaire for depression.

Methods: One thousand patients selected randomly and by convenience from 4 primary care clinics were assessed by PRIME-MD and completed a questionnaire measuring the following validation variables: functional status and well-being, disability days, somatic symptoms, depression severity, suicidal thoughts, health care utilization, and the physician-patient relationship.

Results: Four symptoms (sleep disturbance, anhedonia, low self-esteem, and decreased appetite) accounted for virtually all the depression symptom-related variance in functional status and well-being, with 8.3% of patients having 2 of these symptoms and 8.2% having 3 or 4 of these symptoms. There was excellent agreement between diagnosis based on core symptoms and major depression ($k = 0.77$; overall accuracy rate, 94%). There were significant differences ($P < .001$) among patients with negative depression screen, 0 to 1, 2, and 3 to 4 core symptoms with scores on each of the validation variables getting progressively worse in these 4 groups. A cutoff point of 2 core symptoms identified all but 3 patients with major depression and an additional 5% of the entire sample without major depression who were significantly ($P < .05$) worse than patients without depression on each of the validation variables.

Conclusion: A strategy that includes the use of a 2-item depression screener followed by the evaluation of 4 core depressive symptoms is an efficient and effective way of identifying and classifying primary care patients with depression in need of clinical attention.

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Depression is one of the most common disorders in the primary care setting. Approximately 9% to 9% of all adult outpatients seen by primary care physicians have a major depressive disorder. Even more patients suffer milder, but clinically significant, subthreshold levels of depression. Depression results in substantial patient suffering, disability, and health care costs.

Although primary care physicians manage most patients with major depression, 35% to 50% of cases are not detected. Recently a 2-item self-administered screening questionnaire from PRIME-MD has been shown to be a highly sensitive way of identifying patients with major depression. By asking, During the past month, have you often been bothered by: (1) little interest or pleasure in doing things (anhedonia) and (2) feeling down, depressed or hopeless (depressed mood), one can identify almost all (sensitivity, 96%) patients with major depression. However, the specificity of these 2 questions for major depression is modest. Depending on the prevalence of depression in the population being screened, as many as 50% of the patients will screen positive and approximately two thirds of those who screen positive will not have major depression.

All patients who screen positive will need to be evaluated for major depression. However, primary care physicians generally do not make diagnoses of depression based on Diagnostic and Statistical Manual of Mental Disorders (DSM) and they do not appear to base important management decisions on this diagnostic classification system. This may be owing to the complexity of the diagnostic criteria. The diagnosis of major depression is based on the presence of at least 5 of the following 9 symptoms most of the day nearly every day for a 2-week period: (1) depressed mood; (2) anhedonia; (3) sleep disturbance; (4) appetite disturbance; (5) loss of energy; (6)
PATIENTS AND METHOD

This study used data from the PRIME-MD 1000 study that involved 1000 adult patients seen by 31 primary care physicians in the following 4 primary care sites: New England Medical Center General Medical Associates, Boston, Mass (hospital-based group practice); Jacobi Medical Center, formerly Bronx Municipal Hospital Center of the Albert Einstein College of Medicine, New York, NY (city hospital clinic); Walter Reed Army Medical Center General Medicine Clinic, Bethesda, Md (for both active duty and retired military personnel and their families); and the University of South Alabama College of Medicine, Mobile (family practice clinic).8

The first 369 patients were selected by convenience but independently of the participating physicians’ suspecting or knowing that a patient had any psychopathologic conditions. The remaining 631 patients were selected using site-specific methods (eg, all patients seen during selected sessions, every third patient seen until a physician’s quota was reached) designed to avoid sampling bias.22 The mean age of these patients was 55 years (age range, 18-91 years); 60% were women; 58% were white; and 28% were college graduates. Each patient completed a 26-item patient questionnaire, which included the 2-item depression screener, before seeing their physician. Three hundred twenty-five patients checked yes to at least 1 of these symptoms and were asked by their physicians a series of questions contained in the Clinician Evaluation Guide. These questions assessed the presence or absence of the 9 symptoms of major depression, including suicidal ideation.

All patients completed a validation questionnaire during the visit. This questionnaire included (1) the Medical Outcomes Study Short Form General Health Survey (SF-20), a 20-item instrument that measures 6 domains of patient functioning and well-being (hereafter referred to as health-related quality of life): pain, physical functioning, role functioning, social functioning, mental functioning, and general health perceptions (score on the SF-20 subscales range, 0-100, with lower scores indicating worse functioning);23 (2) the Somatic Symptom Inventory, a 13-item instrument that determines the degree to which a patient has been bothered by a variety of common symptoms during the last 6 months (score range, 0-52, with higher scores indicating more severe symptoms);24 (3) the Zung Depression Scale, a 20-item questionnaire that was used as an independent measure of severity of depression (score range, 0-60, with higher scores representing more severe depression).25 Disability days were evaluated by asking, “How many days altogether in the past three months were you kept from your usual activities because you weren’t feeling well?” Health care utilization was assessed by asking patients to indicate the number of times they visited a medical doctor and emergency department during the last 3 months.

An additional validation instrument, the 10-item Difficult Doctor-Patient Relationship Questionnaire that measures the difficulty of the encounter as experienced by the clinician was completed by physicians after each visit. This measure was included during the last 8 months of the study and was available on 627 of the original 1000 patients. Scores on the 10-item Difficult Doctor-Patient Relationship Questionnaire can range from 10 to 60, with higher scores indicating greater difficulty.26

DATA ANALYSIS

A series of multiple regression analyses were used to identify the symptoms of depression most predictive of functional status and well-being. These analyses were performed to identify a core subset of depressive symptoms. Functional status and well-being were selected as the dependent variable in these analyses because they represent important global outcome measures that are strongly affected by depression.4 A primary goal of health care is to maximize function in everyday life and achieve the highest level of well-being. We, therefore, chose to develop criteria for depression that were maximally predictive of these outcomes. Initially, we used the mean of the 6 SF-20 subscale scores to measure functional status and well-being. We then ran similar multiple regression analyses for each of the 6 SF-20 subscales (general health perceptions, pain, physical, social, role, and mental functioning).

The regression analyses were performed in 2 steps. In the first step, patient demographics (age, sex, education, minority status, and level of education), the number of physical illnesses, and site of clinical care were entered as control variables. In the second step, the 9 symptoms of depression were entered using a forward regression analysis. After identifying a core subset of depressive symptoms, we used a receiver operating curve to explore the sensitivity and specificity of various diagnostic cutoff points for identifying patients who met the DSM criteria for major depression. Based on this analysis, 2 cutoff points for the core subset of depressive symptoms were selected for further analysis. We then compared patients whose symptoms either did or did not meet these new criteria and those whose symptoms either met or did not meet the new DSM criteria for major depression in terms of a variety of additional outcome measures. Means of the various outcome variables were compared by analysis of variance and adjusted for patient demographics (age, sex, education, minority status, and level of education), the number of physical illnesses, and site of clinical care. Tests of the significance of differences observed between subgroups were corrected for multiple comparisons using the Bonferroni technique.
RESULTS

IDENTIFYING A CORE SUBSET OF DEPRESSIVE SYMPTOMS

We first determined the combination of depressive symptoms that were most predictive of the patient’s functional status and well-being as measured by the mean of the 6 SF-20 subscale scores. After controlling for age, sex, minority status, education, the number of physical disorders, and clinical site, the following 4 symptoms significantly entered the regression analysis in a stepwise manner: sleep disturbance, anhedonia, low self-esteem, and change in appetite (Table 1). Collectively, these variables and the control variables explained 27% of the variance in functional status and well-being. Forcing in the remaining 5 symptoms of depression did not increase the percentage of explained variance.

We then performed similar regression analyses using each of the 6 SF-20 subscale scores as the dependent variable. In each case (except for the mental health subscale), after entering the control variables the only significant depressive symptoms in the regression analyses were combinations of the 4 symptoms noted earlier (Table 2). In the mental health subscale regression analysis, psychomotor changes and depressed mood entered the regression analysis in addition to anhedonia and low self-esteem. The addition of these 2 symptoms only explains an additional 6% of the variance after the control variables and the 4 core depressive symptoms are entered into the regression analysis (i.e., 23% vs 29%). Thus, it seems as though the following 4 symptoms (1) sleep disturbance, (2) anhedonia, (3) low self-esteem, and (4) change in appetite consistently explain all or almost all the variance in functional status and well-being that can be attributed to the 9 diagnostic symptoms of depression.

EVALUATING POSSIBLE DIAGNOSTIC THRESHOLDS

After identifying the core subset of depressive symptoms that was most consistently predictive of functional status and well-being, we sought to determine how many of these symptoms should be present to consider a diagnosis of depression. We compared the depression-related characteristics as well as the sensitivity and specificity of various diagnostic thresholds to a criterion standard based on the DSM criteria for major depression as determined by primary care physicians using PRIME-MD.

The Figure is a receiver operator curve that shows the sensitivity plotted against the specificity for diagnostic thresholds ranging from 1 to 4 symptoms. There is a marked increase in specificity without much loss of sensitivity when the threshold is increased from 1 to 2 symptoms. Increasing the threshold from 2 to 3 symptoms increases the specificity from 94% to 99.2%, but decreases sensitivity from 97.4% to 65.2% (Table 2). Increasing the threshold to 4 symptoms dramatically decreases the sensitivity without improving specificity.

As can be seen in Table 3, 8.3% of the 1000 patients in this sample experienced 2 of the 4 core depressive symptoms and another 8.2% of patients experienced 3 or 4 of these symptoms, giving a total prevalence rate of 16.5% if a cutoff point of 2 symptoms is used. This is a somewhat higher prevalence rate than the 11.5% who met the DSM criteria for major depression. These data suggested that it might be useful to evaluate 2 possible diagnostic thresholds: 2 symptoms vs 3 or 4 symptoms.

Table 1. Depressive Symptoms as Predictors of Functional Status and Well-being

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>%β</th>
<th>t</th>
<th>Significance</th>
<th>Adjusted R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control variables†</td>
<td></td>
<td></td>
<td>. . .</td>
<td>. 09</td>
</tr>
<tr>
<td>Sleep disturbance</td>
<td>.21</td>
<td>.35</td>
<td>&lt; .001</td>
<td>.20</td>
</tr>
<tr>
<td>Anhedonia</td>
<td>.18</td>
<td>.29</td>
<td>&lt; .005</td>
<td>.23</td>
</tr>
<tr>
<td>Low self-esteem</td>
<td>.15</td>
<td>.26</td>
<td>&lt; .02</td>
<td>.25</td>
</tr>
<tr>
<td>Change in appetite</td>
<td>.13</td>
<td>.23</td>
<td>&lt; .03</td>
<td>.27</td>
</tr>
<tr>
<td>Remaining 5 symptoms of depression</td>
<td>. . .</td>
<td>.51</td>
<td>.26</td>
<td></td>
</tr>
</tbody>
</table>

*Based on the mean of all 6 Medical Outcomes Study Short Form General Health Survey (SF-20), functional status, and well-being scale scores. Ellipses indicate not applicable.
†Age, sex, minority status, level of education, number of physical disorders, and clinical site.

Table 2. Symptoms of Depression as Predictors of Functional Status and Well-being

<table>
<thead>
<tr>
<th>Depressive Symptom</th>
<th>Pain</th>
<th>Social</th>
<th>Role</th>
<th>Physical</th>
<th>Mental</th>
<th>Health Perceptions</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appetite</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depressed mood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anhedonia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low self-esteem</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concentration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychomotor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suicidal ideation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Symptoms entered by forward regression analysis after controlling for age, education, sex, minority status, clinical site, and number of physical disorders. Shaded boxes indicate symptoms that significantly (P < .05) entered the regression analysis in a stepwise manner. MOS SF-20 indicates the Medical Outcomes Study Short Form General Health Survey.
Variables.

Screener had the most favorable scores on each of these

Patients who screened negative on the depression

physicians as being the most difficult to take care of.

and emergency deparment, and were viewed by their

Depression Scale scores, the most visits to a physician

activities, the most somatic symptoms, the worst Zung

subscales on the SF-20), the most days of impaired

status and well-being (as measured by the mean of the 6

adversely affected, that is, they had the worst functional

tic, patients with 3 to 4 symptoms were the most

among patients in these 4 groups. For each characteris-

characteristics of patients with 3 or 4 depressive symptoms

and 2 core depressive symptoms with patients who

screened negative on the 2-item PRIME-MD depression

screener and those who screened positive but had only

0 to 1 core depressive symptom. There were significant

differences (P<.001) in each of these characteristics

among patients in these 4 groups. For each characteris-

tic, patients with 3 to 4 symptoms were the most

adversely affected, that is, they had the worst functional

status and well-being (as measured by the mean of the 6

subscales on the SF-20), the most days of impaired

activities, the most somatic symptoms, the worst Zung

Depression Scale scores, the most days of impaired

and emergency department, and were viewed by their

physicians as being the most difficult to take care of.

Patients who screened negative on the depression

screener had the most favorable scores on each of these

variables.

Table 3. Prevalence and Operating Characteristics of

Criteria Based on a Core Subset of Depressive Symptoms*  

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Prevalence, Sensitivity, Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major depressive disorder</td>
<td>115 (11.5)</td>
</tr>
<tr>
<td>Core subset of depressive symptoms</td>
<td>2</td>
</tr>
<tr>
<td>Core subset of depressive symptoms</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Core subset of depressive symptoms</td>
<td>2-4</td>
</tr>
</tbody>
</table>

*Ellipses indicate not applicable.

Table 4 compares the depression-related characteristics of patients with 3 or 4 depressive symptoms and 2 core depressive symptoms with patients who screened negative on the 2-item PRIME-MD depression screener and those who screened positive but had only 0 to 1 core depressive symptom. There were significant differences (P<.001) in each of these characteristics among patients in these 4 groups. For each characteristic, patients with 3 to 4 symptoms were the most adversely affected, that is, they had the worst functional status and well-being (as measured by the mean of the 6 subscales on the SF-20), the most days of impaired activities, the most somatic symptoms, the worst Zung Depression Scale scores, the most days of impaired activity and emergency department, and were viewed by their physicians as being the most difficult to take care of. Patients who screened negative on the depression screener had the most favorable scores on each of these variables.

COMPARING PATIENTS IDENTIFIED BY A CORE SUBSET OF SYMPTOMS WITH THOSE DIAGNOSED BY DSM CRITERIA

Of a total of 115 patients, there were only 3 with major depression who did not have at least 2 of the core subset of depressive symptoms (Table 5). These 3 patients

Table 4. Health-Related Characteristics of Patients With Various Definitions of Depression*  

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Screen Negative (n = 875)</th>
<th>0-1 Symptoms (n = 160)</th>
<th>2 Symptoms (n = 83)</th>
<th>3-4 Symptoms (n = 82)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean SF-20†</td>
<td>75.1</td>
<td>63.7</td>
<td>59.0</td>
<td>48.4‡</td>
</tr>
<tr>
<td>Days of impaired activity</td>
<td>3.2</td>
<td>7.5</td>
<td>11.3</td>
<td>13.9§</td>
</tr>
<tr>
<td>Somatic Symptom Index</td>
<td>20.1</td>
<td>25.6</td>
<td>28.4</td>
<td>32.7‡</td>
</tr>
<tr>
<td>Zung Depression Scale score</td>
<td>32.6</td>
<td>40.8</td>
<td>44.8</td>
<td>49.7‡</td>
</tr>
<tr>
<td>Visits to physician and emergency department</td>
<td>1.7</td>
<td>1.9</td>
<td>2.9</td>
<td>3.5§</td>
</tr>
<tr>
<td>Difficult Doctor-Patient Relationship Questionnaire (DDPRQ-10) score</td>
<td>19.3</td>
<td>23.0</td>
<td>25.1</td>
<td>26.3§</td>
</tr>
</tbody>
</table>

*Means adjusted for age, sex, minority status, educational level, clinical site, and number of physical illnesses. Lower Medical Outcomes Study Short Form General Health Survey (SF-20) scores indicate greater impairment, while higher Zung Depression Scale, Somatic Symptom Index, and DDPRQ-10 scores indicate more severe illness or difficulty. Actual numbers vary for each analysis because of missing data.

†Mean of the 6 SF-20 functional status and well-being scale scores.

‡Mean of the 6 SF-20 functional status and well-being scale scores.

§P<.001 for the differences between screen negative, 0 to 1, 2, and 3 to 4 core depressive symptoms.

5P<.0001 for the differences between screen negative, 0 to 1, 2, and 3 to 4 core depressive symptoms.

Table 5. Health-Related Characteristics of Patients With No Depression, 2 to 4 Core Depressive Symptoms Without Major Depression, and Major Depression With or Without 2 to 4 Core Depressive Symptoms*  

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No Depression (N = 160)</th>
<th>2-4 Core Depressive Symptoms Without Major Depression (N = 53)</th>
<th>Major Depression With or Without 2-4 Core Depressive Symptoms (N = 115)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean SF-20†</td>
<td>72.4</td>
<td>53.1§</td>
<td>43.7</td>
</tr>
<tr>
<td>Days of impaired activity</td>
<td>3.8</td>
<td>8.8§</td>
<td>14.8</td>
</tr>
<tr>
<td>Somatic Symptom Index</td>
<td>21.1</td>
<td>28.2§</td>
<td>32.1</td>
</tr>
<tr>
<td>Zung Depression Scale score</td>
<td>33.9</td>
<td>42.0§</td>
<td>50.2</td>
</tr>
<tr>
<td>Visits to physician and emergency department</td>
<td>1.8</td>
<td>3.1§</td>
<td>3.2</td>
</tr>
<tr>
<td>Difficult Doctor-Patient Relationship Questionnaire (DDPRQ-10) score</td>
<td>19.6</td>
<td>24.3§</td>
<td>26.4</td>
</tr>
</tbody>
</table>

*Means adjusted by analysis of variance for sex, age, minority status, level of education, clinical site, and number of physical illnesses. Numbers vary for each analysis because of missing data.

†Only 3 patients with major depression did not have 2 to 4 core depressive symptoms.

‡Mean of the 6 Medical Outcomes Study Short Form General Health Survey (SF-20) scale scores. Lower SF-20 scores indicate greater impairment, while higher Zung Depression Scale, Somatic Symptom Index, and DDPRQ-10 scores indicate more severe illness or difficulty.

§P<.001 for the differences between screen negative, 0 to 1, 2, and 3 to 4 core depressive symptoms.

5P<.005, corrected for multiple comparisons.

Difference from no depression significant at P<.05, corrected for multiple comparisons.
were only modestly impaired (mean SF-20, 58.4). Their levels of somatic symptoms (mean Somatic Symptom Index, 19.4), depression severity (mean Zung Depression Scale score, 36.2), and Difficult Doctor-Patient Relationship Questionnaire score (mean, 15.9) were not different than patients with no depression (Table 5).

There were also 53 patients who had 2 or more of the core subset of depressive symptoms but did not meet the criteria for major depression. This group of 53 patients, when compared with patients with no depression, had worse functional status and well-being, more somatic symptoms, worse depressive symptoms on the Zung Depression Scale, more visits to the physician and emergency department in the previous 3 months, and are perceived as being more difficult to care for by their physicians (P<.05 for all; Table 5). However, when compared with patients with major depression, these patients have better functional status and well-being and less somatic and depressive symptoms (P<.05).

Among these 53 patients there were 3 with 3 or 4 core depressive symptoms. These 3 patients seemed to be as symptomatic and functionally impaired (ie, mean SF-20, 42.8; mean days of impaired activity, 7.3; mean Somatic Symptom Index, 32.6; and mean Zung Depression Scale score, 39.6) as patients with major depression. These patients made a mean of 6.2 visits to their physician and emergency department in the last 3 months compared with 3.2 visits for patients with major depression. The remaining 48 patients did not meet the DSM criteria for major depression but had 2 core depressive symptoms. These patients are worse than patients with no depression (P<.05) but better than patients with major depression (P<.05) in terms of functional status and well-being (mean SF-20, 54.8), somatic symptoms (mean Somatic Symptom Index, 27.6), and depression severity (mean Zung Depression Scale score, 42.3).

The core subset of depressive symptoms also seemed to be as effective the as Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)27 major depression criteria in identifying patients with suicidal thoughts (Table 6). This analysis is based on the 325 patients who checked 1 or more of the mood disorder screening questions and, therefore, subsequently underwent a complete Clinician Evaluation Guide evaluation for major depression. Twenty-five of these patients with at least 2 of the core depressive symptoms had suicidal thoughts vs 26 patients with major depression. Patients with 3 or 4 core symptoms appear to be more likely than those with only 2 of these symptoms to have suicidal thoughts (24% vs 6%), and just as likely to have suicidal thoughts as patients with major depression (24% vs 23%).

Table 6. Prevalence of Suicidal Ideation in Patients With and Without Primary Care Depressive Disorder and Major Depressive Disorder

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Suicidal Ideation, No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core depressive symptoms</td>
<td></td>
</tr>
<tr>
<td>0-1</td>
<td>Present 9 (6) Absent 151 (94)</td>
</tr>
<tr>
<td>2</td>
<td>Present 5 (6) Absent 78 (94)</td>
</tr>
<tr>
<td>3-4</td>
<td>Present 20 (24) Absent 62 (76)</td>
</tr>
<tr>
<td>Major depressive disorder</td>
<td></td>
</tr>
<tr>
<td>Absent</td>
<td>Present 8 (4) Absent 202 (96)</td>
</tr>
<tr>
<td>Present</td>
<td>Present 26 (23) Absent 89 (77)</td>
</tr>
</tbody>
</table>

The goal of this study was to explore the feasibility of using a core subset of symptoms to diagnose depression after using the 2-item PRIME-MD screening questionnaire. We found that 4 depressive symptoms explained virtually all the variance in functional status and well-being that could be explained by the 9 symptoms required for a DSM-IV27 diagnosis of major depression. These 4 core symptoms—sleep disturbance, anhedonia, low self-esteem, and appetite change—can be easily remembered by using the mnemonic SALSA. It should be noted that anhedonia is included in both the screening and diagnostic assessments. The level of anhedonia required for a diagnosis is different than the level required for screening. The diagnostic threshold for anhedonia, consistent with the DSM-IV, was “nearly every day for the last 2 weeks,” while the screening threshold was “during the past month, often bothered by . . .”

A variety of important outcome measures in addition to functional status and well-being, including days of impaired activity, somatic symptoms, depression severity, visits to a physician and the emergency department, difficulty in the physician-patient relationship, and suicidal ideation, were used to compare patients who could be identified by the core subset of depressive symptoms vs those diagnosed by the full set of DSM-IV27 criteria. These data indicate that the core subset of depressive symptoms can identify and distinguish patients with no depressive disorder from those with a milder form of depression (2 symptoms) and from those whose depression seems to be more severe (3 or 4 symptoms). This latter group appears to be as adversely affected as those diagnosed as having major depression using the full set of DSM-IV criteria.

Among the 325 patients who screened positive for depression on the 2-item screening questionnaire, 165 of them (51% or 16.5% of the total sample) had 2 or more of the core depressive symptoms, whereas 115 (35% or 11.5% of the total sample) met the DSM-IV criteria for major depression. A cutoff point of 2 core depressive symptoms had excellent sensitivity (97.4%) for identifying patients with major depression. This cutoff point identified 112 of the 115 patients with major depression. The 3 patients with major depression who did not have at least 2 core depressive symptoms were only modestly symptomatic and functionally impaired.

There were 53 patients (5% of the total sample) who had at least 2 core depressive symptoms but did not meet the DSM-IV criteria for major depression. Nonetheless, these patients appear to be worthy of our clinical attention. Among patients who did not meet the criteria for major depression, patients with 3 or 4 core depressive symptoms are as adversely affected as those with major depression.
depression, while those with 2 core depressive symptoms are clearly worse off than those with no depression but not as adversely affected as patients with major depression.

Several caveats should be kept in mind, however, when interpreting these results. First, the data for this study were obtained by using PRIME-MD that consists of a screening questionnaire and structured interview. It is possible that collecting this type of information by a typical clinical interview, without PRIME-MD, might yield slightly different results.

Second, in this study depressive symptoms could have been related to recent bereavement, drug or alcohol abuse, or a known medical condition. It is possible, for example, that for some patients a change in appetite could have been attributable to an underlying malignancy and not depression. Recent bereavement, drug and alcohol abuse, and known medical problems should be taken into consideration, therefore, before arriving at a diagnosis of depression. If we were able to do this in our data set, the prevalence of depression using both the DSM-IV criteria and the core set of depressive symptoms would be slightly less than the prevalence rates reported in Table 1.

Previously reported data from the PRIME-MD 1000 study indicated that only about 2% of patients were thought by their physicians to possibly have a secondary depressive disorder caused by a physical disorder, medication, or other drug.22 This represents less than 10% of all patients who had a diagnosed mood disorder.

Approximately 5% of the 1000 patients had probable alcohol abuse or dependence. It is difficult to determine whether a depressive symptom is directly related to an alcohol disorder or to a comorbid mood disorder. Recent data suggest that in patients with both an alcohol disorder and depression, it is beneficial to specifically treat an alcohol disorder or to a comorbid mood disorder. Recent bereavement, drug and alcohol abuse, and known medical problems should be taken into consideration, therefore, before arriving at a diagnosis of depression. If we were able to do this in our data set, the prevalence of depression using both the DSM-IV criteria and the core set of depressive symptoms would be slightly less than the prevalence rates reported in Table 1.

In the PRIME-MD 1000 study patients were not asked about recent bereavement. If depressive symptoms begin within 2 to 3 weeks of a loved one’s death, the diagnosis may be uncomplicated bereavement. This should not be viewed as a disorder but rather as a normal, relatively benign state that generally resolves without treatment. Symptoms of low self-esteem or guilt and suicidal ideation are rare in simple bereavement and, therefore, suggest the presence of an underlying mood disorder.

It should also be pointed out that while suicidal ideation is not one of the 4 core depressive symptoms, it should always be evaluated in any patient diagnosed as having a mood disorder, since it will be present in almost a quarter of patients with 3 or 4 core symptoms or major depression.

In conclusion, this study has determined that after screening for depression with a 2-item questionnaire it is feasible to identify and classify patients who are adversely affected by depressive symptoms based on only 4, as opposed to 9, depressive symptoms. This core subset of depressive symptoms represents an attractive alternative for several reasons. The shorter list of symptoms would not only be easier to remember but would also be more efficient to use in the busy primary care setting. Whereas the average visit to a mental health professional in the United States is 30 minutes or longer, 75% of primary care encounters are completed in 15 minutes or less.29 Moreover, the primary care physician often must address multiple issues in a single visit that includes acute complaints, chronic medical disorders, health maintenance recommendations, physical examination, and prescription refills. Partly for these reasons, the 4-item CAGE questionnaire30 for detecting alcoholism tends to be more widely used in primary care than the full list of DSM criteria or longer instruments such as the Michigan Alcohol Screening Test (MAST).31

A second argument in favor of using the core subset of depressive symptoms is that it appears to separate patients with milder levels of depression from those with more moderate to severe impairment. Patients with 3 or 4 core symptoms appear to be as adversely affected as patients with major depression, while those with 2 core depressive symptoms are worse than patients with no depression but, in general, not as adversely affected as those with major depression.

We, therefore, believe that using the 2-item PRIME-MD depression screening questionnaire followed by an evaluation of the core subset of depressive symptoms of sleep disturbance, anhedonia, low self-esteem, and appetite changes is an efficient and effective way of identifying and classifying primary care patients with depression who are in need of clinical attention.

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