

Medical and Psychosocial Correlates of Self-Reported Depressive Symptoms in Family Practice

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A study was undertaken to examine the medical and psychosocial correlates of self-reported depressive symptoms in patients drawn from six community-based family practices. Of 293 adult patients approached in reception rooms, 262 between the ages of 17 and 70 years agreed to complete a brief screening instrument containing the Center for Epidemiologic Studies Depression Scale. Twenty-seven percent of these patients scored in the depressed range. The twofold excess of depressed women occurred at the point of seeking consultation rather than within the reception room sample. None of the depressed patients gave depression as their reason for visit.

A weighted sample of 57 depressed and 39 nondepressed patients was selected for a telephone interview incorporating previously validated measures of physical health, life stress, and social support. Self-reported depression scores were associated with physical symptoms, chronic health problems, recent life events, and a lack of supportive relationships. Additionally, the association between physical symptoms and depression was not due to simple overlap between measures, and less severe interpersonal disturbance was a better predictor of depression than were traumatic life events. Additive combinations of stress, health, and support variables accounted for up to 30 percent of the variance in depression. Overall, the results highlight the difficulties facing family physicians attempting to detect depression among their patients.

Most persons suffering from clinically significant depressive symptoms do not receive treatment, and most in treatment consult a primary care physician rather than a mental health service.^{1,2} Improvements in detection and treatment may depend heavily on primary care providers,³ although the detection, diagnosis, and treatment of depressed patients remain poorly understood aspects of primary medical care. There have been claims that primary care physicians miss identifying existing depression in much of their practices. The bulk of the research cited in support of such claims has utilized self-reported measures as the criteria for depression,^{4,5} but even in studies utilizing diagnoses based on structured interviews, it has been found that physicians fail to detect depression in 30 percent⁶ to 50 percent⁷ of the patients in their practices with diagnosable depression and anxiety.

Evaluation of the adequacy of the care of depressed patients in primary care is clouded by uncertainty in the following areas: (1) the prevalence and natural history of depression in such settings,⁸ (2) the treatment and prognostic significance of depression as it is identified by various instruments, including questionnaires and structured interviews,⁹ (3) the lack of association between documentation of psychotherapy or psychopharmacology provided by the physician and a documented mental illness,¹⁰ and (4) the relationship of depressive symptoms to patients' reasons for visit and other information potentially available about them.

Available evidence suggests that very few primary medical care patients with significant depressive symptoms identify depression as their reason for visit or complain directly of depression.⁹ Physicians must either routinely inquire about depressive symptoms or rely on other information to signal that such an inquiry is warranted. It would thus be helpful to specify correlates of depressive symptoms so that suggestions might be made as to which patients may be in need of further assessment in the absence of an explicit complaint of depression.

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With such a purpose, this paper reports a preliminary study of self-reported depressive symptoms in a community-based family practice research network, with particular emphasis on the medical and psychosocial correlates of these symptoms. This study was designed to (1) determine the prevalence of depressive symptoms; (2) explore possible correlates of depression in this population, including demographic variables, physical complaints and chronic health conditions, stressful life events, and limited social resources; and (3) test whether additive or interactive combinations of these variables added substantially to the prediction of depression compared with their influence singly. Past research on depression in primary care has been criticized for its reliance on measures of unknown reliability and validity, so care was taken to utilize measures for which psychometric characteristics have been established in previous work.

Each of these classes of possible correlates are relevant to the tasks facing family physicians attempting to detect undeclared depressive symptoms among their patients. For instance, depression is diagnosed more frequently in women,¹¹ but family practice visits are made by a greater proportion of women than men, so it is not clear whether the excess of depressed women will occur at the point of visit or exists within the entire population of family practice patients.

Given that depression is not likely to be a patient's stated reason for visit, it would be useful to know more about the relationship between depressive symptoms and other health complaints. Do depressed patients merely present with diffuse somatic complaints that might be interpreted as masked depression, or do they present with chronic medical conditions that may distract physicians from the depression? Some research suggests that depression co-occurs with chronic health problems,¹² but also that having a chronic health condition is a risk factor for subsequent depression even among persons who are not currently depressed. Thus, in the California Department of Health Human Population Laboratory (HPL)¹³ study of 6,928 community-residing adults, persons who had a chronic health problem and yet were not depressed were 1.62 times as likely to be depressed in an assessment nine years later, even after controlling for a host of other risk factors. Such comorbidity might complicate detection of depression and prove to be a vexing problem for family physicians.

The association between stressful life events and depression is well established,¹⁴ although it has not been specifically studied in primary care populations.¹⁵ It would be helpful to know which types of life events are indicative of possible depression. One would expect that major life disruptions such as divorce or death of a family member would be associated with depression, but such events are relatively infrequent and so by themselves may prove in-

sufficient in predicting the more common occurrence of significant depressive symptoms. Personal resources such as social support have been seen as a source of resistance to depressive symptoms.¹⁶ Yet it remains controversial as to whether the principal effect of social support on depression is a direct one or whether it is best viewed as a moderator or buffer of the effects of life events. Further, it is not clear that the theoretically interesting relationships among life events, social support, and depression are of sufficient magnitude to warrant attention in efforts to identify depressed family practice attenders.

METHODS

Patients in six community-based family practices were screened for depression using the Center for Epidemiological Studies Depression questionnaire (CES-D).¹⁷ The practices' studied were drawn from an informal research network of private family practices connected to the University of Michigan Medical School Department of Family Practice. Patients were selected from the reception room on a consecutive basis during random days in each office. Two hundred ninety-three patients were approached, of whom 262 adults between the ages of 17 and 70 years participated. All subjects read and signed a consent form approved by the institution's human subjects committee. The consent form described the study as concerning "what may determine how people talk to their physicians and how their physicians react to what they say." While it indicated that stress, health status, and social relationships would be assessed, there was no mention of depression. For the 31 patients who declined participation, lack of waiting room time was the major reason given, followed by a lack of interest in being involved in any research.

The sample was composed of 87 (34 percent) male patients and 175 (67 percent) female patients. Patients completed the CES-D questionnaire as well as demographic questions and a single question assessing reason for visit. A sample of 96 patients that was weighted to provide an adequate number of depressed patients for study was asked to consent to subsequent telephone interviews lasting approximately 30 minutes, at a time convenient for them. By design, 57 were randomly selected from the 71 patients in the total sample who scored as depressed. Similarly, of the 191 nondepressed patients in the total sample, 39 were selected at random and consented to interviews. These telephone interviews included the administration of previously validated questionnaires, including the Health Status Questionnaire,¹⁸ the negative life events portion of the PERI Life Events Scale,¹⁹ and a Social Support Questionnaire.²⁰ Physicians also completed some brief rating scales on these patients, but results of that portion of the study will be left for a later report. Administration of

questionnaires and interviews occurred during May through July, 1987.

Measures

Depression. The Center for Epidemiologic Studies Depression Scale (CES-D)¹⁷ was used for screening patients and identifying those who have significant depressed symptoms. It is an internally consistent and valid measure of depressive symptomatology with a particular emphasis on depressed mood.²¹ The established cutoff of 16 or higher for depression (out of possible scores from 0 to 60) was used. Using this cutoff, Hough et al²² found a sensitivity of 0.806 and a specificity of 0.534 for the CES-D for combined diagnoses of affective disorders in primary care. These diagnoses were based on structured interviews. Weissman et al²¹ concluded, "While the CES-D, as any symptom scale, cannot differentiate between diagnostic groups, it has demonstrated validity as a screening tool for case finding in psychiatric populations and for detecting groups at high risk for depression."

Health Status. The Health Status Questionnaire is a self-reported measure that has been adopted with minimal modification from what has been validated and used in the HPL^{18,23} and the Berkeley Stress and Coping Projects.²⁴ The scale includes questions on a wide variety of chronic conditions and specific somatic symptoms, as well as questions concerning disability in working, eating, dressing, and being able to move around. There are also several questions assessing subjects' perceived energy levels. Meltzer and Hochstim²⁵ found the questionnaire acceptably reliable and valid in comparison with medical records.

In the present study, each respondent received three scores based on information obtained from the questionnaire.^{18,23} The first score was the total number of somatic symptoms reported by the respondent. Symptoms included such health problems as chest pain, back trouble, headaches, and repeated stomach pain. A second score was based on the subject's reported energy level, and ranged from 0 to 13. Items included trouble sleeping, being worn out at the end of the day, and having more or less energy than one's own age group. A third score was based on number of chronic conditions reported by the respondent.

Life Events. The 53 undesirable life event items of the PERI Life Events Scale¹⁹ were used for the measure of life events. The original PERI consists of 102 life events that were generated from inductive interviews in an urban New York sample. Forty-nine of the items refer to desirable life changes, however, and only undesirable changes have been consistently related to depression.

Social Support. Questions used to assess social support

TABLE 1. RELATIONSHIP BETWEEN DEPRESSION AND DEMOGRAPHIC VARIABLES (N = 262)

Demographic Characteristics	Depressed (n = 71)	Nondepressed (n = 191)
Mean age (yrs)	37.4	35.3
Sex		
Male	22	65
Female	52	123
Marital status		
Married	40	108
Single	22	59
Separated, widowed or divorced	12	20
Employment		
Employed	54	152
Unemployed	35	20

were drawn from those previously validated in community surveys conducted by the Institute for Social Research.²⁰ Questions refer to whether friends and kin make the respondents feel cared about and express an interest in them. A more extensive set of questions assesses the quality of intimacy in the marital relationship.

RESULTS

Of the 262 patients screened with the CES-D, 71 (27 percent) scored above the established cutoff for depression of 16 or above. Of the patients screened, not one gave depression as the reason for visit, but three indicated stress or fatigue. All three patients were depressed, but this number obviously represented a small proportion of the depressed patients in the total sample. Thus, previous findings that most patients with significant depression do not declare it as their presenting problem was replicated.

The relationship between CES-D scores and demographic variables is displayed in Table 1. Age and sex were not shown to be related to self-report of depressive symptoms on the CES-D. The total sample had a female-to-male ratio of 2.01, but within the sample, approximately equal proportions of men and women were depressed. Thus, the finding of an excess of depressed women over depressed men replicates what has consistently been found in the literature in other populations, yet this excess occurred at the point of consultation rather than within the waiting room sample. Marital status and employment status were marginally related to CES-D scores (Table 1), with the formerly married and unemployed scoring higher on the CES-D, but these relationships did not achieve statistical significance. They were, however, of the magnitude found in larger epidemiological surveys.¹³ There

Health Measures	r
Chronic health problems	.29**
Physical symptoms	.37**
Energy level	.43**
Self-rated health	.37**
Specific complaints	
Fatigue	.35**
Stiffness, swelling, aching	.34**
Headaches	.28*
Chest pain	.22*
Specific chronic conditions	
Arthritis	.25*
Hypertension	.21*

* P < .05
** P < .01

were no interactions between sex and age, sex and employment status, or sex and marital status.

The HPL Health Questionnaire data obtained in the interview correlated strongly with depression (Table 2). Depressed patients reported more than twice as many medical conditions as nondepressed patients. Reports of arthritis and hypertension were by themselves correlated with depression. Overall symptom scores were also found to correlate significantly with the CES-D score. As can be seen, some of these complaints might represent masked depression. Thus, fatigue was strongly correlated with a diagnosis of depression, as was the scale assessing energy level. This finding suggested that it would be appropriate to examine whether symptoms potentially reflecting depression might entirely account for the relationship between somatic symptoms and depression. Correlation coefficients were recalculated after eliminating from the symptom scale any items that might be indicative of depression. When this calculation was done, there was still a significant correlation between somatic symptoms and depression ($r = .37$, $P < .01$).

The number of stressful life events experienced in the previous six months was significantly correlated with the CES-D score (Table 3). When the CES-D scores were dichotomized, depressed patients were found to report more than twice as many stressful life events as nondepressed patients. Specific life events that were significantly correlated ($P < .05$) with depression are also shown in Table 3. As was anticipated, these events were generally not major life traumas, but rather they represented less severe interpersonal disturbances and disappointments that are ambiguous as to whether they are the precipitants or the effects of depression. Major life traumas were infrequent among both the depressed and nondepressed respondents.

Life Events and Support	r
Total life events	.38**
Specific events	
Trouble with boss	.24*
Serious family arguments	.23*
Moving to worse residence	.22*
Dropping vacation plans	.21*
Dropping recreational activity	.20*
Marital problems	.20*
Social support	
From friends	-.26**
From spouse (n = 54)	-.30*
From kin	.01

* P < .05
** P < .01

Responses to the Social Support Questionnaire that were obtained in the interview indicated that support from both friends and spouses was negatively related to self-reported depression (Table 3); persons who were depressed reported less support from these relationships. Support from kin was unrelated to depression scores.

Thus, physical symptoms, chronic health conditions, recent life events, and deficiencies in social support were all related to depression. Yet while these relationships were statistically significant, they were still modest. When the correlation coefficients were squared, the percentage of variance in depression for which the predictor variables accounted was found to be in no case larger than 14.5 percent. Multiple regression analyses were next utilized to determine whether either additive or interactive combinations of these variables significantly improved upon the prediction of depression from the single variables, as measured by increases in the percentage of variance in depression that was explained. For instance, did knowing both patients' level of support and health problems allow one to predict better their depression scores than if one knew only support or health? Also, was there such an interaction between life events and social support that experiencing recent life events *and* low support put patients particularly at risk for depression? For these analyses, a dichotomous depressed-nondepressed distinction was utilized as the dependent variable.

Additive combinations of predictor variables did indeed improve upon what was accomplished with the variables when they were independently considered. For instance, taken together, recent life events and chronic health problems accounted for 19 percent of the variance in depression ($F[2,92] = 10.85$, $P < .0001$), and life events, chronic health problems, and support from friends accounted for

percent of the variance in depression ($F[2,92] = 10.01, P < .0001$). Among the married, low support from the spouse and recent life events accounted for 27 percent of the variance in depression ($F[2,53] = 9.62, P = .0003$), and taken together, low spousal support, recent life events, physical health complaints, and chronic health problems accounted for 30 percent of the variance in depression ($F[4,51] = 5.43, P = .001$). While some interaction effects were statistically significant, none made substantial contributions to the prediction of depression.

DISCUSSION

Physicians' ability to detect depression depended upon patients' naming depression or stress as their problem, the depression of most patients with clinically significant levels of symptoms would remain undiagnosed. Overall, the prevalence of depressive symptoms (27 percent) detected using the CES-D in this community-based population compares well with that reported in other studies (12 to 56 percent) where screening questionnaires have been used.¹ The prevalence of diagnosable depression reported in studies utilizing structured interviews and standardized criteria is 5 to 10 percent.¹ Other studies have found prevalence rates between these two extremes.^{2,3} Given this wide range of rates, it seems clear that the label *depression* is being applied to a heterogeneous group of patients with a wide range of medical and psychiatric characteristics. It should be reiterated that the measure of depressive symptoms utilized in the present study, the CES-D, is well validated but does not distinguish between diagnostic groups. It has been found to have an adequate sensitivity, but only a modest specificity. Most appropriately, the patients identified by the CES-D as having elevations in depressive symptoms should be viewed as a population at risk for clinical depression. Most of these patients would not be judged as diagnosably depressed in a structured interview, but the group would include most of the patients studied who would be so diagnosed. Yet, there remains considerable ambiguity about the meaning of both elevated levels of depressive symptoms and formal diagnoses in a primary care population. Much of the current controversy about the detection and treatment of depression in primary care assumes that depressive symptoms and diagnoses have the same meaning in primary medical care and tertiary psychiatric populations. Research examining this question is sorely needed.

Some studies suggest that many modest elevations in self-reported-depression scores are transient and self-limiting.²⁶ Other studies suggest a less benign picture, however. One community survey found that persons who had elevated scores on a self-reported measure of depression

were four times more likely to have a high score nine years later than were those persons who did not have an elevated score.¹³ Other studies have suggested that a sizable minority of persons who are drawn from primary care and other nonpsychiatric populations and who have elevated depression scores will have elevated scores a year later.^{26,27} It may be that elevated self-reported-depression scores frequently reflect a long-term or recurring problem having implications for both health care and quality of life, even though not they do not always identify cases of formally diagnosable depression.

This study set out to identify correlates of depression that might prove useful in aiding family physicians in the detection of depressive symptomatology in their practices. Consistent with current theory and research conducted with other populations, self-reported-depression scores are associated with physical symptoms, chronic health problems, recent life events, and a lack of supportive relationships. Additionally, the association between physical symptoms and depression was not found to be due to simple overlap between measures, and less severe interpersonal disturbance was a better predictor of depression than traumatic life events, even if only because of the relative infrequency of more major life events. Additive combinations of health problems, recent life events, and unsupportive relationships accounted for sizable proportions of the variance in depression. Although such additive combinations are not necessarily predictors of depression, the physician's suspicions about possible undeclared and undetected depressive symptoms should be increased when these factors co-occur.

As these results suggest, physicians cannot simply depend upon patients' declaration of depression for its detection, and information about chronic health problems and psychosocial circumstances might be useful to determine when explicit inquiry and screening for depression is advisable. It was somewhat surprising to find that the usually dependable excess of depressed women over depressed men appears to occur at the point of more women being in the family physician's waiting room rather than proportionally more of these women being depressed. Thus, knowing that there is a sex difference in rates of depression is less of an aid to detecting depression in family practice patients than might have been anticipated. Overall, the results of this study caused a greater appreciation of the difficult task that family physicians face in detecting depression in their practices.

Based on these results, the characteristics of the depressed patients studied and described here can be used to paint a picture of a "typical" depressed patient, as seen by a "typical" family physician. The picture, however, must be painted in the broadest of brushstrokes, and the presentation of it must be qualified by the recognition that it does not account for most of the variance in de-

pressive symptoms in family practice patients. The patient can be of any age or either sex, is somewhat more likely to be widowed, separated, or divorced, and is unemployed. The depressed patient will complain of fatigue, chronic pain from any of several locations, or chronic disability related to acute or chronic physical symptoms.^{12,29} More important, the patient may have an accumulation of recent life events, a lack of social support from friends or spouse, and a chronic physical illness, with these factors combining additively. The patient may thus report work, family, or other interpersonal difficulties, and may have a "thick chart" as a result of having been diagnosed previously with several acute and chronic medical problems.³⁰

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