Substituting Nonsomatic for Somatic Symptoms in the Diagnosis of Depression in Elderly Male Medical Patients

Stephen R. Rapp, Ph.D., and Scott Vrana, Ph.D.

The authors examined the sensitivity and specificity of a modified version of the Research Diagnostic Criteria (RDC) for major, minor, and intermittent depressive disorder in 150 elderly male medical inpatients. Four somatic RDC symptoms were replaced with four nonsomatic symptoms. The sensitivity of the modified criteria was 87%, the specificity was 97%, and 96% of patients were correctly classified. Misclassifications were of mildly depressed patients. These results provide empirical support for the use of alternative, nonsomatic depressive symptoms when somatic symptoms are ambiguous indicators of depression.

(Am J Psychiatry 1989; 146:1197–1200)

Poor physical health places older adults at greater risk for development of affective disorders. The prevalence of depressive disorders among older adults residing in the community is approximately 2% (1, 2), while studies of elderly medical in- and outpatients (3, 4) have found rates of depression ranging from 15% to 45%.

The diagnosis and treatment of psychiatric comorbidity in this population is made difficult by several factors. First, medical patients prefer to rely on primary care physicians for the detection and treatment of psychological problems (5). Second, detection of such comorbidity by health care givers other than mental health specialists is frequently poor (3, 6–8). For example, in a recent study (3), only 9% of the cases of comorbid depression in elderly inpatients were detected by medical house staff. Third, some somatic signs and symptoms of depression—e.g., appetite or weight change, hypo- or hypersomnia, fatigue or loss of energy, and diminished ability to concentrate—also can be symptoms of various medical illnesses and/or drug side effects and are correlates of normal aging. Despite their potential ambiguity, somatic symptoms figure prominently in all current psychiatric diagnostic systems, including DSM-III-R, the Research Diagnostic Criteria (RDC) (9), and ICD-9.

Nine cardinal signs and symptoms identify major depression: dysphoria, change in appetite or weight, disturbed sleep, fatigue or energy loss, psychomotor agitation or retardation, anhedonia, self-reproach, diminished concentration or ability to make decisions, and suicidal thoughts or behavior. Common associated depressive symptoms are depressed appearance or tearfulness, pessimism, brooding, feelings of inadequacy, self-pity, demandingness or dependency, social withdrawal or decreased talkativeness, nonreactivity to environmental events, resentfulness, complaining, or anger. Endicott (10) suggested that one means for dealing with the nonspecificity of somatic symptoms is the replacement of the four cardinal somatic symptoms with four nonsomatic associated symptoms. Specifically, she suggested replacing change in appetite or weight with tearfulness/depressed appearance, replacing sleep disturbances with social withdrawal/decreased talkativeness, replacing fatigue or loss of energy with brooding/self-pity/pessimism, and replacing diminished ability to think or concentrate or indelicateness with lack of reactivity to environmental events. We have found no study, however, in which the validity of these alternative criteria has been evaluated.

In the present study we empirically evaluated Endicott’s proposal for diagnosing depression in a sample of medically ill older men. The sensitivity and specificity of diagnostic classifications made with the alternative criteria were compared to the sensitivity and specificity based on the standard criteria. We also evaluated the sensitivity and specificity of diagnostic classifications made after eliminating but not replacing the somatic symptoms.

METHOD

The participants in this study were the same as those in a previous study of the prevalence and impact of psychiatric comorbidity in elderly medical patients (3, 11). Briefly, the prospective subjects were 314 randomly selected male patients admitted to general med-
icine and surgery units of a 499-bed Veterans Administration hospital who were at least 65 years old. After giving informed consent, the subjects were administered the Mini-Mental State examination (12), and 107 (34.1%) patients were eliminated from the study for failing to score above a standard cutoff. An additional 39 (12.4%) refused to participate, and 18 (5.7%) were eliminated because of incomplete protocols. The remaining 150 subjects met all criteria and were included in the study. These 150 subjects had a mean ± SD age of 69.3 ± 5.2 years, had 9.9 ± 3.7 years of education, and had an annual income of $9,977 ± $5,336; 68% were white and 32% were nonwhite.

As reported by Rapp et al. (3, 11), each subject was interviewed with the Schedule for Affective Disorders and Schizophrenia (SADS) (13). The SADS is a semi-structured interview involving ratings of numerous psychiatric symptoms, including all of the somatic and nonsomatic cardinal and associated depressive symptoms. For this study, each symptom was scored as either present or absent. In accordance with the methods of the SADS/RDC and DSM-III-R, a somatic depressive symptom was rated as absent only if it was judged to be clearly secondary to an organic condition (e.g., loss of appetite after initiation of chemotherapy).

The SADS interview data were then used to assign RDC diagnoses. A diagnosis of major depressive disorder was given if dysphoria plus five of the additional eight cardinal symptoms were present for at least 2 weeks. A diagnosis of probable major depressive disorder required one fewer symptom. A diagnosis of minor or intermittent depressive disorder required dysphoria plus at least two additional symptoms; a probable diagnosis required one fewer symptom.

As reported earlier (3), interrater reliability for RDC diagnoses was evaluated by randomly selecting 10% of the patients to receive concurrent SADS ratings by a second rater, who independently assigned RDC diagnoses. The interviews were conducted by an advanced graduate student in clinical psychology who had extensive training in the use of the SADS/RDC method. The second rater was one of us (S.R.R.), who had considerable experience with the SADS/RDC method. Agreement on the presence or absence of a diagnosis was good for the combined RDC categories (kappa = 0.94, p < 0.01). The kappa coefficient for depressive diagnoses was 0.89 (p < 0.05). Data reported by Rapp et al. (3) also supported the concurrent, convergent, and discriminant validity of the original depressive diagnoses.

For this study, RDC diagnoses of major, minor, and intermittent depressive disorder were reassigned after substituting tearfulness or depressed appearance, social withdrawal or decreased talkativeness, lack of reactivity to environmental events, and brooding, self-pity, or pessimism for appetite or weight change, sleep disturbances, diminished ability to think or concentrate or indecisiveness, and fatigue or loss of energy.

| TABLE 1. Correlations Between RDC Somatic Depressive Symptoms and Proposed Alternatives for 150* Elderly Male Medical Patients |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| Alternative Symptom             | Weight/ Appetite Change | Sleep Problems | Loss of Energy or Fatigue | Reduced Concentration |
| Tearfulness or depressed appearance | 0.17<sup>b,c</sup> | 0.15 | 0.35<sup>d</sup> | 0.32<sup>d</sup> |
| Social withdrawal or decreased talkativeness | 0.08 | 0.23<sup>b,e</sup> | 0.34<sup>d</sup> | 0.33<sup>d</sup> |
| Pessimism, brooding, or self-pity | 0.10 | 0.41<sup>d</sup> | 0.27<sup>b,f</sup> | 0.48<sup>d</sup> |
| Lack of reactivity to environment | 0.18<sup>e</sup> | 0.07 | 0.24<sup>e</sup> | 0.20<sup>b,e</sup> |

<sup>a</sup>Data on one subject missing in a few analyses.
<sup>b</sup>Corresponds to one of the exact item substitutions proposed by Endicott (10).
<sup>c</sup>p < 0.05.
<sup>d</sup>p < 0.0001
<sup>e</sup>p < 0.01.
<sup>f</sup>p < 0.001.

RESULTS

Pearson product-moment correlations between the somatic items from the original RDC and the proposed substitutes are presented in Table 1. The number of cases used in all correlational analyses was 150 except for a few in which data on one subject were missing. Each correlation between a somatic item and the item Endicott (10) proposed as a substitute for it is identified. These item-to-item correlations are not optimal; indeed, the mean ± SD of these four correlations is 0.22 ± 0.04, compared to 0.25 ± 0.12 for the entire table of correlations. By substituting all four of the alternatives for the four somatic items, it was possible to examine the correlation between the total number of positive somatic items and the total number of positive substitute items. This correlation was 0.44 (p < 0.0001), indicating that while the new items do not provide redundant information, they are strongly associated with the original items.

While these correlations were low, they compared favorably to the intercorrelations of all RDC symptoms of depression. The mean ± SD interitem correlation for all RDC criteria for depression was 0.28 ± 0.10 (range = 0.09 to 0.47). In comparison, after substituting the alternative criteria for the somatic criteria, the interitem correlation for all nine criteria was 0.30 ± 0.10 (range = 0.10 to 0.53). This suggests that the alternative, nonsomatic symptoms are related to the other criteria for major depressive disorder in the same manner as the somatic symptoms for which they substitute. The low internal consistency of symptoms in...
this sample of elderly medical patients contrasts with the high intercorrelations among the same symptoms in medically healthy psychiatric patients (13). This is not surprising, however, since many RDC depressive symptoms also represent medical illnesses, drug side effects, and/or normal aging in both depressed and nondepressed patients.

The key question to ask of the proposed substitutes for the somatic criteria is, To what extent does substituting the new criteria result in diagnostic decisions that are comparable to those made with the standard RDC criteria? Table 2 displays the classification of patients into the categories of major depressive disorder, minor or intermittent depressive disorder, or no depression according to the standard RDC criteria and the modified RDC criteria. Of the 150 patients, 144 (96%) were classified in the same way with both sets of criteria. Twenty-three patients received diagnoses of major, minor, or intermittent depressive disorder with the standard criteria, and 20 of them also received depressive diagnoses with the modified criteria (sensitivity = 87%). Two of the three patients with false negative diagnoses had received diagnoses of probable minor or probable intermittent depressive disorder with the standard criteria, placing them at the borderline of a diagnosable disorder. Two patients were classified as having major depressive disorder according to the RDC and minor or intermittent depressive disorder according to the alternative criteria. One of these patients had received a diagnosis of probable major depressive disorder when classified with the standard RDC. Thus, of the five subjects given less severe diagnoses with the modified criteria, three had received borderline diagnoses with the standard RDC. One person diagnosed as having intermittent depressive disorder with the RDC was given a diagnosis of major depressive disorder on the basis of the alternative criteria. None of the nondepressed subjects was misidentified with the alternative criteria (specificity = 97%, 124 out of 127). Thus, the non somatic criteria proposed by Endicott (10) were highly sensitive and specific to depressive disorders.

Another method for dealing with ambiguous somatic symptoms would be to simply eliminate them and use only the five remaining nonsomatic symptoms.

To examine this method, we reclassified the patients in the following manner and compared the resulting classifications to those made with the standard criteria. Patients were assigned a diagnosis of depression if 1) dysphoria was present and 2) a set number (one, two, three, or four) of the remaining four cardinal symptoms were present. The sensitivities were 70%, 30%, 17%, and 10%, respectively, and the specificities were 95%, 89%, 87%, and 86%, respectively. Thus, eliminating the somatic symptoms without replacement resulted in poorer classification of patients than when nonsomatic symptoms were substituted.

**DISCUSSION**

For this sample of elderly male medically ill inpatients, substituting the alternative nonsomatic depressive symptoms suggested by Endicott (10) for the RDC somatic depressive symptoms yielded diagnostic decisions similar to those reached with the standard RDC. The interitem correlations suggested that, rather than substituting these new items on an individual basis, however, all four should be used when a physical cause for the somatic symptoms is suspected.

The availability of a clinical rating instrument that is less reliant on somatic symptoms than current diagnostic systems would be helpful to clinicians and researchers. It may be easier and more accurate to assess brooding, social withdrawal, nonreactivity, etc., than to decide when somatic symptoms are secondary to depression and when they are secondary to the host of other potential causes.

A potential limitation of the present study is the unknown generalizability of these results given the relatively small sample size. Another limitation is the lack of female and younger adult subjects. Differences in the prevalence of somatization between males and females and young adults and old adults, for example, might limit the generalizability of our findings to a female population. It will be important to validate these preliminary findings with different and larger samples.

**REFERENCES**

6. Nielsen AC, Williams TA: Depression in ambulatory medical patients: prevalence by self-report questionnaire and recogni-
SOMATIC DEPRESSIVE SYMPTOMS IN THE ELDERLY

tion by nonpsychiatric physicians. Arch Gen Psychiatry 1980; 37:999–1004

Am J Psychiatry 146:9, September 1989