Screening for Depression: Single Question versus GDS

Jane Mahoney,† Theresa J. K. Drinka,‡ Rose Abler,§ Gail Gunter-Hunt,‖ Charles Matthews,¶ Stefan Gravenstein,* and Molly Carnes**

Depression is among the most common and the most treatable psychological disorders in older adults. For many reasons, many older adults with potentially treatable depressive episodes do not seek mental health care services. Thus, for many of these individuals, their primary care physician is their only link to the mental health care system. This often places the burden of recognizing depressive symptoms on health professionals such as physicians in general practice, social workers, and nurses. However, accurately assessing depression among medically ill older adult patients in the outpatient setting can be a problem. It has previously been shown that depression in older patients is underdiagnosed by physicians who are not psychiatrists.

A Yale Task Force on Geriatric Assessment has recommended to internists that the question, “Do you often feel sad or depressed?” be used to screen for depression in older adults. If a patient answers “yes” to this question, the Task Force has recommended administering a Geriatric Depression Scale (GDS), a 30-item questionnaire well validated for screening affective status among older adult populations. To our knowledge, no previous literature exists on the reliability or validity of this 1-question approach. The primary purpose of this investigation was to compare the single question with the GDS for ability to correctly identify depression in elderly veterans seen in a geriatric medical clinic. We hypothesized that the single question would be less accurate than the GDS in identifying depression and nondepression.

METHODS

Subjects were community-dwelling veterans seen in a Department of Veterans Affairs geriatric clinic, located in Madison, Wisconsin. During an 8-month period, all new referrals to the clinic and all patients scheduled for an annual check-up (n = 86) were asked by their primary physician to participate in the study. Fifty-five subjects were consecutively enrolled as they gave informed consent. Twenty-seven patients declined participation in the study, and 4 were physically unable to participate.

All data were obtained during patients' regularly scheduled visits to the clinic. After informed consent was obtained, the GDS and the 1-question Yale Depression Screen were administered by a geriatric staff member of the geriatric clinic. The order of administration was initiated by random selection and subsequently rotated. All charts were reviewed by 1 of 2 physicians for diagnoses, medications, and scores on the Barthe1 activities of daily living (ADL) Index, ALSAR instrumental activities of daily living (IADL) questionnaire, and Mini-Mental State Exam (MMSE) recorded within the previous 6 months.

All subjects then underwent clinical interview with a modified form of the Schedule for Affective Disorders and Schizophrenia (SADS) by a postdoctoral psychology fellow (not a member of the clinic staff) who was blinded to results of the screening instruments. In the interest of conserving the energy and time of patients, the SADS was shortened so that sections that pertained to diagnostic categories not mutually exclusive with major, minor, or intermittent depression were removed. A senior staff psychologist (also blinded to the results of the screening tests and not a member of the clinic staff) then reviewed all interview data, and depressive diagnoses were determined in joint conference using the SADS results. Results of the SADS interview were converted directly into diagnoses of depression according to Research Diagnostic Criteria (RDC).

For the present study, RDC categories of major, minor, and intermittent depression were of interest. A cut point of ≥11 on the GDS was used to define a positive screening result. Sensitivities and specificities were calculated for the GDS and the Yale Depression Screen. Percentages of correct diagnoses (depressed and nondepressed) were also calculated. Differences in percentages of correct identifications were analyzed for significance by comparison of paired proportions using McNemar's test and exact binomial p. A 95% confidence interval was constructed for the difference between the two instruments, based on a large-sample approximation.

RESULTS

Fifty-one men and 4 women participated in the study. The subjects were typically only mildly debilitated (mean Barthel Score = 94 ± 9.4, mean ALSAR R-score = 6 ± 5.7), despite having an average of 6 diagnoses and 3 medications each. Subjects had no more than moderate cognitive impairment (mean MMSE score = 27 ± 2.5, range 19–30). The predominant diagnoses of the sample were organic heart...
Table 1. Sensitivity, specificity and number of subjects correctly identified by one question and GDS*

<table>
<thead>
<tr>
<th></th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Number Correctly Diagnosed**</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Question</td>
<td>.69</td>
<td>.90</td>
<td>47 (85.4%)***</td>
</tr>
<tr>
<td>GDS</td>
<td>.54</td>
<td>.93</td>
<td>44 (80%)***</td>
</tr>
</tbody>
</table>

*Gold standard is Research Diagnostic Criteria for major, minor, and intermit-tent depression.
**Includes both depressed and non-depressed subjects.
***NS difference (p = .50) by McNemar's test.

Disease, osteoarthritis, hypertension, and chronic obstructive pulmonary disease. The most common medications were antithromboticanticoagulation agents, antihypertensives, diuretics, histamine-2 blockers, and nebulizer inhalers.

Thirteen of 55 patients met RDC for major (n = 3), minor (n = 5), and intermittent (n = 5) depression. Differences between the 1-question and the GDS are shown in Table 1. The 1-question Yale Depression Screen had a specificity of 69 percent and a specificity of 90 percent. The GDS had a sensitivity of 54 percent and a specificity of 93 percent.

The 1 question correctly identified 9 depressed and 38 nondepressed subjects, for a total of 47 of 55 patients correctly identified (85.4%). The GDS correctly identified 7 depressed and 37 nondepressed subjects, for a total of 44 of 55 people correctly identified (80%). Although the 1 question correctly identified 5.4% more patients than the GDS (95% confidence interval = -6.1% to +16.9%), the difference between the 2 was not significant (P = .50).

With the 24% prevalence of major, minor, and intermittent depression in this sample, the 1-question screening screen had a positive predictive value of 83.4% and a negative predictive value of 90%. This compares with a 58% positive predictive value and 86% negative predictive value for the GDS.

DISCUSSION

The purpose of this investigation was to compare the effectiveness of 2 depression screening instruments in elderly veterans seen in a geriatric outpatient clinic. Overall, the one question Yale Depression Screen performed much better than expected. The 95% confidence interval indicates that the percent of subjects correctly identified by the depression question was unlikely to be more than 6.1% less than that identified by the GDS, or more than 16.9% greater. With the prevalence of depression at approximately 25%, the 1-question had a higher positive predictive value. Since time is a factor in the geriatric screening process, the question, “Do you often feel sad or depressed?” appears to provide a quick reasonable alternative to more lengthy questionnaires such as the GDS.

The Yale Task Force recommended that a positive response to the 1 question, “Do you often feel sad or depressed?”, be followed by administration of the GDS. Our results suggest that the GDS provides no additional information beyond the 1 question. Therefore, a positive response to the 1 question should be followed by a more in-depth clinical evaluation for the diagnosis of depression.

Prevalence estimates of affective disorders in the elderly population have ranged from 5 to 63 percent. Blazer et al found a 26% prevalence of depressive states (including dysthymia, dysthymia, and other less severe depressive states) in community-dwelling elderly persons. Other authors have found higher estimates of depression in medically ill elderly populations. Our prevalence of 24% may underestimate the true prevalence of depression in our geriatric clinic population. Thirty-one percent of patients targeted for the study refused to participate, and depression rates may have been higher among those patients. If this is true, the positive predictive value would be greater than 85%.

It should be noted that both screening tools had relatively low sensitivity for identifying depression. Relying solely on either of these instruments would have missed the presence of depression in a number of medically ill patients. Our results highlight the difficulty of relying on depression screening tools to assist in diagnosing depression in elderly adults with multiple medical problems, and underscore the importance of using clinical judgment to interpret results of screening tools.

There are several important limitations to our study. First, because of the few subjects with major depression, we cannot comment on their sensitivity or specificity for this specific diagnosis. Second, it should be remembered that the preponderance of males in this study may limit generalizability to females. Third, our findings must be viewed as preliminary because of the small sample size.

In conclusion, the question, “Do you often feel sad or depressed?” appears to be as accurate as the GDS in screening for depression and may provide a quick alternative for use in a busy geriatric clinic. A positive response to this question merits an in-depth clinical evaluation to determine the diagnosis of depression.

ACKNOWLEDGMENTS

The authors acknowledge Ellen B. Roeffeck, PhD for her help with the statistical analyses for this paper.

REFERENCES


