

Screening for Psychiatric Disorders in Primary Care

Jerry Halverson, MD; Carlyle Chan, MD

INTRODUCTION

Two-thirds of all patients with psychiatric disorders are seen exclusively in primary care settings. Thirty percent of all primary care patients meet DSM-IV-TR criteria for a psychiatric disorder, but many of these patients go undiagnosed.¹ Undiagnosed psychiatric disorders harm the patient's health and functioning. This can be prevented, because early effective treatment leads to better outcomes.^{2,3} For this reason, there has been piqued interest in finding more efficient ways for primary care to identify those at risk for psychiatric conditions.

Current United States Preventative Services Task Force (USPSTF) guidelines encourage screening for psychiatric disorders in primary care.^{4,5} Increased screening should lead to increased detection and improved management of psychiatric conditions. The purpose of this paper is to acquaint medical providers with several screening tests that are useful for identifying psychiatric risk for patients in their clinics. We will concentrate on the 4 areas of psychiatric comorbidity that are most common—and most commonly missed—in primary care: depression, anxiety, alcohol abuse, and cognitive impairment. We will review the strengths and weaknesses of the individual tests and make recommendations based on the realization that extra time is a luxury few generalists have.

DEPRESSION

Undiagnosed depression causes significant social and functional impairment in millions of Americans each year. Depression is common and thought to be present in up to 15% of the primary care population,³ yet half of

these patients go unrecognized.¹ USPSTF-recommended screening tests⁴ include the Beck Depression Inventory (BDI), the Center for Epidemiological Studies Depression Scale (CES-D), and the Zung Self-Rating Depression Scale (SDS). When compared to a diagnosis made with a psychiatric interview, all 3 have sensitivities of 90% or greater and specificities of around 70%.³

The Beck Depression Inventory-2 (BDI-2)^{3,6,7} is a self-administered test that contains 21 item sets, each with a series of 4 statements. The scale evaluates key symptoms of depression including mood, pessimism, sense of failure, self dissatisfaction, guilt, punishment, self dislike, self accusation, suicidal ideas, crying, irritability, social withdrawal, indecisiveness, body image change, work difficulty, insomnia, fatigability, loss of appetite, weight loss, somatic preoccupation, and loss of libido. The BDI-2 uses simple language, has a good sensitivity/specificity ratio, takes less than 10 minutes to complete and is easy to score, but is copyrighted and available for approximately \$1.45 per scale. The “BDI-Fast Screen” is available at approximately 41 cents per scale. This is a 7-question “quick screen” made specifically for use as a screening tool for medical patients. It is felt to be valid, but not as sensitive as the full BDI-2.⁸

The Center for Epidemiologic Studies Depression Scale (CES-D)^{3,6,9} is a 20-item, self-administered scale. Items are rated from 0-3. CES-D scores range from 0-60, with higher scores indicating more severe depressive symptomatology. Total severity is calculated by reverse scoring some items and then summing the scores. A score of 16 or higher is considered depressed. The CES-D is easy to understand, takes less than 10 minutes to complete, is in the public domain, and is easy to score.

The Zung Depression Scale (SDS)^{3,6,10} contains 20 items and is self-rated. The items address affective, behavioral, and physiological aspects of depression. Items are rated 0-4. Total severity is calculated by reverse scoring some

Doctor Halverson is an assistant professor (CHS) in the Department of Psychiatry at the University of Wisconsin-Madison. Doctor Chan is professor and director of residency education in the Department of Psychiatry and Behavioral Medicine at the Medical College of Wisconsin, Milwaukee, Wis.

items and then summing. Less than 50 is normal range; 50-59 mild to minimal depression; 60-69 moderate to severe depression; >70 severe depression. The SDS is easy to administer, is in the public domain and takes less than 10 minutes to complete. This test does not, however, clearly cover all aspects of the diagnostic criteria for DSM-IV-TR and misses some aspects of atypical depressions such as hyperphagia and hypersomnia.

There is recent evidence that asking 2 simple questions about mood and anhedonia (“Over the past 2 weeks, have you felt down, depressed, or hopeless?” and “Over the past 2 weeks, have you felt little interest or pleasure in doing things?”) may be as effective as using the longer instruments described above.¹¹ Similar 2-item screeners have shown a sensitivity of up to 95%.¹² They do not, however, cover all DSM-IV-TR criteria for depression and lack specificity compared to other screens. From a practical standpoint, we would recommend using these questions as a brief screen and follow up positive screens with one of the tests described above, given possibly by a nurse or staff member in the office.

Perhaps the most commonly used screening tool for depression in older adults is the Geriatric Depression Scale (GDS). The GDS was developed specifically for use in geriatric populations, and has been demonstrated to be both valid and reliable (92% sensitivity, 89% specificity). It consists of 30 simple yes/no questions (15 items in a short-form version) and is easy to administer and score.^{13,14} Screening tools that rely on self reporting, however, lose the validity as cognitive function declines. When screening for depression in patients with significant cognitive impairment, the Cornell Scale for Depression in the Dementia (CCSD) is recommended.¹⁵

ANXIETY

Eighteen percent of all primary care patients suffer from anxiety disorder, yet it is recognized only 24% of the time.^{16,17} One explanation is that patients with anxiety disorder frequently present with somatic complaints (83%) rather than psychosocial complaints (17%).^{16,18} Patients with anxiety disorders make twice as many visits as non-psychiatric patients with the same physical diagnosis. Twice as many patients with a diagnosis of generalized anxiety disorder (GAD) are seen by gastroenterologists as by psychiatrists.¹⁶ Even when recognized, 40% of patients diagnosed go untreated.^{18,19}

Improved identification and treatment of anxiety disorders in primary care has the potential to improve patient quality of life and decrease the overuse of medical services. Unfortunately, there is currently no existing single test that works well as a screening test.⁶ Due to the heteroge-

nous presentations of anxiety, such a test would need to examine the cognitive, somatic, and behavioral components of anxiety. One way to accomplish this is to use a combination of several specific anxiety screens that cover the different components. Authorities suggest using 3 well-validated, short self-report screening tests that cover the 3 components of anxiety in order to increase sensitivity and specificity. They suggest using the Beck Anxiety Inventory (BAI), The Penn State Worry Questionnaire (PSWQ), and the Fear Questionnaire (FQ).

The BAI^{6,20} assesses anxiety with a focus on the somatic symptoms. It is a 21-item self-report questionnaire that takes 5 minutes to complete. Items include typical symptoms associated with anxiety such as nervousness, inability to relax, dizziness or lightheadedness, and heart pounding or racing. This test is easy to understand and to administer but it does not assess worry or other symptoms of anxiety such as difficulty concentrating, irritability, or sleep disturbances. This scale is copyrighted and available for approximately \$1.42 per scale.

The PSWQ^{6,21} assesses anxiety with a focus on the cognitive symptoms. It evaluates the tendency of a person to worry, the excessiveness or intensity of the worry, and the tendency of the worry to be generalized. It is a 16-item, self-report questionnaire that takes 5 minutes to complete. It uses a 5-point scale with the total score a sum of the questions, ranging from 16 to 80. Some items are reverse scored and patients with GAD generally score >60. This test is easy to administer and is in the public domain. However the test is not specific for GAD and misses many DSM-IV-TR symptoms of anxiety.

The Fear Questionnaire^{6,22} is a self-report questionnaire that was developed to assess the severity of common phobias (agoraphobia, social phobia, and blood-injury phobia) and associated anxiety and depression. It takes 10 minutes to complete. It contains 24 items divided into 4 subscales: the Total Phobia, Agoraphobia, Blood/Injury, and Social Phobia. Each item is rated on a 0-8 scale. Scores range from 0 to 120 on the Total Phobia scale and from 0 to 40 on the other scales. This test is easy to administer but misses many aspects of anxiety. It is also complex to score. It is not public domain but is freely available.

There is no 2-question screen for anxiety. Our recommendation would be to have a higher index of suspicion for anxiety disorder in patients who show signs of anxiety, have unexplained somatic complaints, or have other psychiatric comorbidities. We would recommend using the above scales to maximize sensitivity.

ALCOHOL ABUSE

More than 20% of patients seen in primary care settings

have alcohol abuse problems, and with the low rates of screening (less than 50%²³) a large percentage of these go undiagnosed.⁵ The societal and medical costs of alcoholism are well documented. USPSTF guidelines suggest screening to detect problem drinking in all adult and adolescent patients. USPSTF-recommended screening tools include the CAGE, the AUDIT, and the TWEAK.

The CAGE^{6,24} contains 4 yes-no items. CAGE is an acronym for the questions:

- **C**ut down on drinking—have tried repeatedly without success
- **A**nnoyed by criticism about drinking habits
- **G**uilty feelings about drinking
- **E**ye opener drink needed in the morning

Each yes answer is worth 1 point. A score of 1 is 90% sensitive for those with an alcohol-related disorder, with specificities ranging from 50% to 90%. Sensitivities of a cut-off of 2 are around 80% with a specificity between 80% and 97%. The ease of use of this screen has led to its wide use. However, the test may fail to detect low but risky levels of drinking and CAGE often performs less well among women and minority populations.

The Alcohol Use Disorders Identification Test (AUDIT)^{6,25} is a brief self-report questionnaire that takes about 2 minutes to complete and 2 minutes to score. It consists of 10 questions using a 0-4 scale to yield a total score of 0-40. A score of at least 8 is the most sensitive, but a score of at least 10 was the most specific for alcohol misuse. The test has items that assess 3 domains: alcohol dependence, harmful drinking, and hazardous drinking. In contrast to CAGE, AUDIT compares favorably with other instruments in detecting risky drinking, but is less effective in identifying alcohol abuse and alcoholism. AUDIT is relatively free of gender and cultural bias. The major disadvantage of AUDIT is its length and relative complexity; clinicians require training to score and interpret the test results. The AUDIT is copyrighted, but can be copied.

The TWEAK⁶ test is a brief screen for heavy drinking and clinically significant current or past alcohol problems. TWEAK is an acronym derived from the 5 items in the measure (Tolerances, friends Worry, Eyeopener, Amnesia, Cut down). It is a 5-item self-report measure very much like the CAGE discussed earlier. The tolerance question is considered positive if the subject reports being able to “hold” 5 or more drinks or reports that it takes 3 or more drinks to feel intoxicated. All other questions are positive if answered yes. The tolerance and worry items each count

2 points if positive, and the others are 1 point if positive, yielding a possible total of 7 points. Two points or higher detects risky drinking among pregnant women (with 79% sensitivity/83% specificity) and 3 or more is recommended for identifying alcohol abuse or dependence (with 80% sensitivity/78% specificity). This test takes less than 1 minute to administer and is easy to score. It works well for men and women.

There is also some indication that a 1-question screen²⁶ (“When was the last time that you had more than X drinks in one day,” with X = 4 for women and X = 5 for men) may be an effective screener for problem alcohol use. A positive screen would be an affirmative in the past 3 months. From a practical standpoint, we would recommend using this question as a brief screen and follow up positive screens with one of the tests described above, given by a nurse or staff member in the office.

The final screen we will discuss is the Primary Care Evaluation of Mental Disorders (PRIME-MD),^{6,27} which was created to assist primary care physicians in making psychiatric diagnoses. It has 2 steps: the patient questionnaire (PQ) and the 9-page clinician evaluation guide (CEG), which is a structured interview that the physician uses to follow up on responses checked “positive” on the PQ. The PQ is a 26-item self-report questionnaire covering the 5 most common psychiatric disorders seen in primary care: depression, anxiety, alcohol abuse, somatoform, and eating disorders. The CEG consists of 5 corresponding “modules.” Any positive answer on the PQ triggers the clinician to use the corresponding module for a diagnostic evaluation. These “triggers” lead to questions in a decision tree-structured interview format, which can lead to making DSM IV diagnoses, sub threshold diagnoses (NOS), or rule outs (i.e. rule out bipolar do).

Providers should have 1-3 hours of training specific to the use of the PRIME-MD, which comes with a 13-page instruction manual. Administration times are generally less than 10 minutes. In a study of 1000 primary care doctors,²⁶ the time spent administering the CEG to those who answered positively on the PQ was 8.4 minutes. Those with a diagnosis averaged 11.4 minutes. Those without a diagnosis averaged 5.6 minutes. Ninety-five percent of all cases required less than 20 minutes, which is still longer than all of the screens that we have discussed. A shorter self-report version of the CEG, the PRIME-MD-PHQ²⁸ (Patient Health Questionnaire) is available and is reported to have sensitivities and specificities of 88% and 88% for Major Depressive Disorder. The PRIME-MD was developed with the support of Pfizer Incorporated.

Table 1. Sensitivity in Certain Groups⁶

	Valid for Different Genders?	Valid for Different Cultures?	Valid for Children or Adolescents?*
BDI	Yes	Yes	Used in age >13
BAI	Not known, widely used for both genders	Not known, widely used	Used in age >17
BDI FastScreen	Not known, widely used for both genders	Not known, widely used	Used in age >13
CES-D	Not known, widely used for both genders	Not known, widely used	Used in age >13
SDS	Yes	Yes	Used in age >13
PSWQ	Not known, widely used for both genders	Not known, widely used	PSWQ-C valid for children, adolescents
FQ	Not known, widely used for both genders	Not known, widely used	Not known
CAGE	Less sensitive in women	Less sensitive in some minorities	Used in age >13
AUDIT	Yes	Yes	Used in age >13
TWEAK	Yes	Yes	Used in age >13
PRIME-MD	Not known, widely used for both genders	Not known, widely used	Not known

* Of note, none of the tests are validated in children.

BDI=Beck Depression Inventory; BAI=Beck Anxiety Inventory; CES-D=Center for Epidemiological Studies Depression Scale; SDS=Zung Self-Rating Depression Scale; PSWQ=Penn State Worry Questionnaire; FQ=Fear Questionnaire; CAGE= see text; AUDIT=Alcohol Use Disorders Identification Test; TWEAK= see text; PRIME-MD=Primary Care Evaluation of Mental Disorders.

SCREENING FOR COGNITIVE IMPAIRMENT

Older adults are at higher risk for cognitive disorders such as mild cognitive impairment, dementia, and delirium. The most widely recognized screening tool for cognitive impairment is The Mini Mental Status Exam (MMSE). It consists of 30 items and tests for concentration, orientation, short-term memory, language, and instructional ability. A score below 24/30 usually indicates cognitive impairment. It takes about 5-10 minutes to administer.³⁰ While this tool is valid and reliable, it is not a diagnostic instrument for either dementia or delirium and cannot replace a complete assessment of mental status. It is also not sensitive to problems involving frontal lobe impairment primarily, such as executive dysfunction. Since it relies heavily on verbal skills, reading and writing, the MMSE should be used with some caution in patients with sensory or motor impairment. Assessment of MMSE scores also requires consideration of patients' educational and cultural backgrounds and socioeconomic status. This instrument can be used to follow patients with either dementia or delirium longitudinally. For example, the average rate of decline in patients with Alzheimer's disease is 3 points per year.

Older patients are at higher risk for developing delirium, especially if they have some pre-existing cognitive impairment. The Confusion Assessment Method (CAM) has been developed for use by non-psychiatrically trained clinicians as well as trained non-professional interviewers. The CAM also takes about 5-10 minutes to administer, and has a sensitivity of 94%-100% with a specificity of 90%-95%. It correlates significantly with the MMSE. While it is useful to identify the presence or absence of delirium, it does not assess

the severity of the delirium. Hence it is less useful for assessing clinical improvement or deterioration.³¹

At times, older patients may manifest significant signs of cognitive impairment, such as impaired judgment or difficulty implementing plans, while at the same time not exhibiting appreciable memory problems.³² Patients in the early stages of dementias that primarily affect frontal lobe or subcortical structures (e.g. neurodegenerative disorders such as Parkinson disease, Huntington disease, and frontotemporal dementia) may have trouble performing instrumental activities of daily living, for example, prior to the development of significant memory impairment characteristic of the later stages. Valid and reliable instruments for testing executive function include a version of the clock drawing test, Royall's CLOX,³³ the Controlled Oral Word Association Test,³⁴ and the oral version of the Trail Making Test.³⁵

CONCLUSION

Screening for psychiatric disorders in primary care works. In studies using screening tests, rates of detection increased by up to 47%.³ Tests can be tailored to fit into any practice. Table 1 shows the validity of the different screens in different populations. Screening by itself is not the only answer. No single screening test can make a diagnosis, but a positive screen should increase suspicion and prompt physicians to investigate further. As with other types of screening tests, the best tests are useless if positive screens are not followed up and explored for full diagnosis. Positive screens should trigger full diagnostic interviews or a referral to a mental health professional to make the diagnosis. Screening

does stratify risk, so that resources can be geared toward those who need it. Screening works best when utilized with definitive evaluation, support, treatment, and follow up. Possible risks of screening include false positive results, the inconvenience of further diagnostic work up, and potential adverse effects of labeling. The possible, and likely, benefits of screening include reducing morbidity and mortality, increasing quality of life, and reducing overall health costs.

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Appendix. Where to Find the Scales

Measure	Web Site	Address
Beck Depression Inventory Beck Anxiety Inventory BDI FastScreen	www.psychcorp.com	The Psychological Corporation 555 Academic Court San Antonio, TX 78204 800.211.8378
Center for Epidemiological Studies Depression Scale	http://patienteducation.stanford.edu/ research/cesd.pdf	NIMH 6001 Executive Boulevard, Room 8184, MSC 9663, Bethesda, MD 20892-9663 301.443.4513
Zung Self-Rating Depression Scale	http://healthnet.umassmed.edu/mhealth/ ZungSelfRatedDepressionScale.pdf	The Early Clinical Drug Evaluation Unit (ECDEU) Assessment Manual- Revised ²⁶
Geriatric Depression Scale (short form) and Cornell Scale for Depression in Dementia	www.rnao.org/bestpractices/PDF/BPG_DDD.pdf	Registered Nurses Association of Ontario
Geriatric Depression Scale (long form)	yeasavage/GDS.html">www.stanford.edu/<tilden>yeasavage/GDS.html	Stanford University
Penn State Worry Questionnaire	http://mlucom6.urz.uni-halle.de/erzwiss/gliederung/ paed/ppsych/sepswqpw.pdf	Thomas Borkovec PennState University Department of Psychology 544 Moore Building University Park, PA 16802
Fear Questionnaire	http://www.nelmh.org/page_view.asp?c=4&did= 1634&fc=001002002	Isaac Marks, MD Maudsley Hospital Institute for Psychiatry De Crespigny Park London SE4 8AF United Kingdom
CAGE	See Text	N/A
Alcohol Use Disorders Identification Test	http://healthlink.mcw.edu/article/1031002170.html	Thomas F. Babor Alcohol Research Center University of Connecticut Health Center Farmington, CT 06030-0410
TWEAK	http://www.emedicinehealth.com/etools/tweak- alcoholism-score.asp	Marcia Russell, PhD Research Institute on Addiction 1021 Main Street Buffalo, NY 14203
Primary Care Evaluation of Mental Disorders	Full PRIME-MD not available on-line	
Patient Health Questionnaire	http://images.clinicaltools.com/images/depclinic/ versions/phq9_2003-06-19_11:55:49.pdf	Robert L. Spitzer, MD Biometric Research Department, Unit 60 New York State Psychiatric Institute 1051 Riverside Drive New York, NY 10032
Mini Mental Status Exam Confusion Assessment Method	www.hartfordign.org .	The Hartford Institute for Geriatric Nursing and the Alzheimer's Association