Stroke is a leading cause of death and disability worldwide.1,2 Because depression is the second leading cause of disability in the world,3 stroke complicated by depression is doubly disabling. Thirty-one percent of stroke survivors are estimated to be clinically depressed (95% confidence interval 28%–35%).4 Thus, at any given time, between 28% and 35% of stroke survivors are likely to be living with depression. With an annual incidence of 795,000 new or recurrent strokes in the United States,1 we might expect 246,000 will be depressed.

Poststroke depression is associated with poorer recovery, reduced health-related quality of life,5 and a higher risk of subsequent stroke and mortality.6,7 We also know that many people hospitalized with stroke have not had their mood assessed by discharge.8 Because depression in chronic illness, including stroke, can be successfully treated, it becomes imperative that we assess for depression for all stroke survivors in our health systems. Indeed, this has become a standard for credentialing stroke care in Australia, the United Kingdom, and the United States.8–12 Nurses are the health professionals most in contact with stroke survivors and their families during an acute episode and are therefore key to assessing the presence of clinical depression.

The purpose of this article is to review the screening and diagnostic assessment tools available to health professionals, with emphasis on clinically feasible instruments that can be used by staff nurses.

Method
A literature search was conducted in MEDLINE with a secondary search in PsycINFO and CINAHL to ascertain any papers relevant to nursing missed by the MEDLINE search. The search terms included stroke and depression, poststroke depression, assessment, measurement, diagnosis. Sub-collections of systematic reviews, diagnosis, and nursing journals were followed until there were no new and relevant papers retrieved.

Definition of Clinical Depression in Stroke
Screening instruments assess for depressive symptoms, but are not designed to diagnose depression disorder without a confirming clinical interview. The gold standard for diagnosis of depression is a clinical interview ascertaining that the person meets the criteria for depression disorder without a confirming clinical interview. The gold standard for diagnosis of depression is a clinical interview. The gold standard for diagnosis of depression is the Structured Clinical Interview for Depression,13 or for people with medical conditions, the Depression Interview and Structured Hamilton.14 Screening tools include questions about all of the components listed earlier, scored either yes or no or with frequency (none to nearly all day). Most have a cut-off score that has been validated as correctly classifying those whose depressive symptoms are or are not confirmed by a diagnostic interview. The ideal screening tool does not mistake motor deficits caused by stroke for the motor retardation of depression and can be used with patients who may have some degree of abnormal speech and has high sensitivity (identifies all the depression that is confirmed with a diagnostic interview) and high specificity (does not include those without depression).

Screening Tools
For nearly 30 years, nurses have been admonished to be alert for depression in people who have survived acute stroke.16–18 However, the plethora and length of various screening and diagnostic tools available has made it hard to know which instruments are both efficient and accurate in detecting depressive symptoms, particularly in the face of medical illness. More recently, a variety of screening instruments used with stroke patients have been evaluated against each other and against the reference standard of clinical interview. Meta-analyses of these studies have provided concrete guidance for clinicians and researchers to use during either the acute or chronic phase of stroke.19 screening tools include the single-item screen,20 the 30- or 15-item Geriatric Depression Scale,21 Montgomery-Asberg Depression Rating Scale (MADRS),22 and the Patient Health Questionnaire (PHQ-2 and PHQ-9).22,23,24

The single-item screen (do you often feel sad or depressed?) has been validated against the MADRS (a structured clinical interview) and found to have sensitivity and specificity >80%, as well as considerable ease of use by research psychology assistants and nurses. The investigators noted that patients do not need to be able to read, write, or have normal speech to respond, thus potentially making this a good screen for stroke patients.14 These same investigators had earlier established that nurses trained to administer the MADRS attained a high degree of sensitivity and acceptable specificity, compared with psychiatrist diagnosis.25

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Lee et al\textsuperscript{11} propose a visual emoticon scale (the Smiley) that can be used with patients who are aphasic or have a language barrier. Patients are asked how frequently they experienced a happy, sad, or neutral face (emoticon) over the past week. The sad face had adequate sensitivity and specificity in comparison with the 15-item Geriatric Depression Scale. It had the advantage of rapidity of administration and ease with a low literacy or aphasic group.

The PHQ-2 item and PHQ-9 item versions are increasingly used in research and in primary care clinical practice.\textsuperscript{8,34} This tool comprises the first 2 or first 9 items of the Brief Patient Health Questionnaire.\textsuperscript{3,18} Patients are asked “Over the last 2 weeks, how often have you been feeling down, depressed, or hopeless?” Responses are scored zero for not at all, 1 for several days, 2 for more than half the days, and 3 for nearly every day. The PHQ-9 adds items about sleep, fatigue, appetite, feeling bad about self, concentration, slow movement and thoughts about death, or hurting self. de Man-van Ginkel et al\textsuperscript{11} recently tested staff nurse administration of both the 2-item and 9-item tools in stroke patients in acute care and in rehabilitation in the Netherlands, with the 15-item Geriatric Depression Scale as the reference test. Test–retest reliability, interrater reliability, and sensitivity–specificity were excellent. They recommend this screening tool for clinical nursing use because of its ease of use, high reliability, and high validity. They also recommend training for nurses using this tool.

The Joint Commission recommends that all stroke patients be screened for depression before discharge: the most likely tools to recommend would either be the single-item screen (do you often feel sad or depressed?) or the PHQ-2 (little interest or pleasure in doing things; feeling down depressed or hopeless). A yes answer to the single-item or a score of >2 for the PHQ-2 would indicate need for further evaluation by a social worker, psychosocial nurse practitioner, or other mental health personnel as dictated by the hospital policy.

The PHQ-9 can also be recommended for stroke nurses’ use with some training.\textsuperscript{12} Nurses using the full 9-item tool would need to know how to score the questionnaire, what referral sources are available for patients who score 5 or more, and how to proceed with patients who have “thoughts that you would be better off dead or hurting yourself” on any occasion. All nurses should inquire of such patients if they have thought about how they might accomplish killing or hurting themselves (is there a plan?) and if they have the means to do so. If there is both a plan and means, there should be an immediate referral to mental health resources.\textsuperscript{86}

**TAKE-HOME POINTS**

- There are several short tools that are valid in screening for depression.
- Nurses can successfully screen for depression in stroke survivors.
- The PHQ-2 and PHQ-9 are easy to use and can rapidly identify those who should be referred on for further evaluation and treatment.

**References**


Disclosures

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Nursing Assessment of Depression in Stroke Survivors
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