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The Effectiveness of the Patient Health Questionnaire-9 Across Cultures

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Statement of the Problem

Major depression is one of the most common and disabling chronic illnesses seen in the United States, with approximately 6.7% of the population experiencing at least one episode of major depression (Druss, Rask, & Katon, 2008). This disorder is often progressive, recurrent, and becomes more frequent, severe and longer over time (Boyd, 2005).

Mayo Clinic Health System – Springfield is located in a rural community with a lack of mental health providers or resources. In rural areas, primary care providers are usually responsible for treating mental health issues. Mayo Clinic Health System uses the PHQ-9 as their standard depression screening tool. Scores are entered into the electronic medical record, but often receive little to no follow-up by the primary care provider. The limited recognition or treatment of depression is not isolated to the Springfield community; it is seen in several rural communities (Huang et al., 2006; Kolbasovsky, Reich, Romano & Jaramillo, 2005; Merz, Malcarne, Roesch & Riley, 2011).

Purpose

This project has two purposes. First, to evaluate the effectiveness of the Patient Health Questionnaire (PHQ-9) across cultures since it is the standard depression tool used across Mayo Clinic Health System. Second, to develop a Standard of Care that would create consistency in the follow-up provided to patients at Mayo Clinic Health System – Springfield Clinic whose PHQ-9 score reflects signs of depression.

Research Questions

1) What is the most effective evidence-based depression screening tool?
2) What is the most effective evidence-based depression screening tool for people of various races or cultures?

Review of Literature

One form of assessment tool includes rapid assessment instruments, which can be used to screen for symptoms of psychiatric disorders (Eack, Singer & Greeno, 2008). Rapid assessment instruments are used to "identify degrees of psychopathology or impairment based on a specific score… to suggest clinically significant symptomatology and recommend treatment" (Eack, Singer & Greeno, 2008, p. 465). These tools are usually self-administered but can be administered by the staff member if needed (Monahan et al., 2008).

The following is not a complete list of cultural views of mental health, but two examples have been provided to show some varying beliefs among different cultures. African Americans are less likely to seek mental health treatment or services than Caucasians, but are more likely to seek informal support (Conner et al., 2010). This could be in part because of their culture, or part of their exposure to racism, discrimination, prejudice, unemployment, poverty, violence, and excessive levels of preventable illness and death (Conner et al., 2010, p. 267; Sinkewicz & Lee, 2011, p. 289).

Latinos experience high rates of depression, possibly due to immigrant stressors such as poverty, missing daily contact and social interaction with family and friends and, difficulty communicating in English, social isolation, acculturation, boredom, and loneliness (Merz et al., 2011, p. 310; Vasquez, Gonzalez-Guarda, & De Santis, 2011, p. 91). Mental illness is something that can affect the whole family in a negative manner and can be embarrassing or shameful (Jang et al., 2011).

Methods

- Conducted a systematic review of the literature regarding the psychometric properties of depression screening tools. Some of the databases that were used include: Academic Search Premier, MEDLINE (PubMed), ERIC on ProQuest, Google Scholar, PsychINFO, PsychTESTS, SAGE Premier, and Social Services Abstracts. Key search terms included: culture, evidence-based, primary care, rapid assessment, rural, self-report, time-effective, and translations. Articles regarding cultural views of mental illness were also reviewed.
- Developed a Standard of Care that incorporated best practices found in the literature to generate consistency in the follow-up provided to patients.
- Led an educational meeting with the Mayo Clinic Health System – Springfield Clinic nurses including a brief overview of the literature and discussion of the Standard of Care.

Data

Table 1: Psychometric Properties of Depression Screening Tools

Citation	Sample	Methods/Tool	Findings
Bagby, R. M., Ryder, A. G., Schuller, D. R., & Marshall, M. B. (2004).	Studies published in MEDLINE since 1979 that examine psychometric properties of the Hamilton depression scale.	Hamilton Depression Rating Scale	Established criteria are met for convergent, discriminant, and predictive validity (though suffers). Interrater and retest coefficients weak for many items, and internal reliability coefficients indicate that some items are problematic. Evidence suggests that the Hamilton depression scale is psychometrically and conceptually flawed.
Campo-Arias, A., Dias-Martinez, L. A., Rueda-Jaimes, G. E., Cadena, L. D. P., & Hernandez, N. L. (2006).	Random sample of people dwelling in an urban area of Columbia.	Zung's Self-Rating Depression Scale	Cronbach's alpha was 0.832. The sensitivity was 88.6%. The specificity 74.8%
Cannon, D. S., Tiffany, S. T., Coon, H., Scholand, M. B., McMahon, W. M., & Leppert, M. F. (2007).	Cigarette smokers drawn from a larger sample of participants in a study of the genetics of nicotine dependence and chronic obstructive pulmonary disease.	Patient Health Questionnaire-9	α= 0.94; several findings support validity. Sensitivity of 69% and specificity of 86% at cutoff of 2. Sensitivity of 53% and specificity of 94% at cutoff of 3.
Dozois, D. J. A., Dobson, K. S., & Ahnberg, J. L. (1998).	1,022 undergraduate psychology students from the University of Calgary.	Beck Depression Inventory-II	α=0.91. Adequate validity (e.g., content, factorial) has been demonstrated, and diagnostic discrimination has been established.
Eack, S. M., Singer, J. B., & Greeno, C. G. (2008).	Participants consisted of a convenience sample of 288 women seeking psychiatric treatment for their children at three community mental health centers in Western Pennsylvania.	Beck Depression Inventory	α= 0.92. Overdiagnosed 36% of cases of Major Depressive Disorder.
Fantino, B., & Moore, N. (2009).	Data from a multicentre, double-blind, 8-week, randomized controlled trial of 278 outpatients diagnosed with Major Depressive Disorder	Montgomery-Asberg Depression Rating Scale	α=0.84; construct validity was satisfactory; stability over time of the scale was good. Sensitivity of 82% and a specificity of 75%.
Leontjevas, R., van Hooren, S., & Mulders, A. (2009).	63 residents from 2 nursing homes for younger people with dementia.	The Montgomery-Asberg Depression Raing Scale; Cornell Scale for Depression	MADRS: α= 0.73. AUC was 0.87. CSD: α=0.71. AUC was 0.76. Internal consistency "good" and concurrent validity "acceptable" on both tools.
Lewinsohn, P. M., Seeley, J. R., Roberts, R. E., & Allen, N. B. (1997).	1,005 community-residing adults (age range=50-96)	Center for Epidemiologic Studies Depression Scale	α= 0.82. The internal consistency, test-retest reliability, and validity were high.
Lynch, S., Curran, S., Montgomery, S., Fairhurst, D., Clarkson, P., Suresh, R., & Edwards, R. (2000).	275 psychiatric inpatients and outpatients with depressive illness and anxiety disorders and a nonclinical sample of 50 people.	Brief Depression Scale	α=0.86. Construct validity was found. Sensitivity was satisfactory. The BDS had a sensitivity of 87% and specificity of 90% at a cut-off score of 19.
Nugent, W. R. (2003).	542 responses to the MPSI obtained from persons, who agreed to participate, seeking help in one of several nonprofit family service agencies for person and/or family problems.	Multi-Problem Screening Inventory Depression Subscale	α=0.89. Reliability is necessary but not sufficient condition for validty.

Note. Twenty journal articles reviewed (N=20); articles displayed are for the most common screening tools found in the literature and were most aligned with the purpose of this project (n=10).

Table 2. Properties of Top Depression Instruments

Property	PHQ-9	BDI-II
Adaptable to rural and small communities	X	X
Appropriate for use in Primary Care	X	X
Cultural utility	X	X
Cost	Free	25 record forms = $52.00
Evidence-based	X	X
Rapid assessment	X	X
Time-effective	5 minutes	5 minutes
Self-report	X	X
Translations available	79	14

Findings

Table 1 depicts that the PHQ-9 had the highest internal validity of α= 0.94 . The BDI-II was close with an internal validity of α= 0.91. The Beck Depression Inventory was not considered because of the over-diagnosis of depression. Table 2 shows the screening of the PHQ-9 and BDI-II through certain characteristics for use. The PHQ-9 was shown to have more translations available and had no cost to use the tool. This, along with the higher internal validity, showed that the PHQ-9 was a better depression screening tool for use at Mayo Clinic Health System.

Table 3. Standard of Care

PHQ-9 Score	Provisional Diagnosis	Treatment Recommendation
<10	Mild or minimal depressive symptoms	Offer reassurance, provide education to call if symptoms get worse
10-14	Moderate depressive symptoms (minor depression)	Be aware of depressive symptoms, offer reassurance; if no improvement after one or more months, consider use of an antidepressant or brief psychological counseling
15-19	Moderately severe major depression	Follow patient's preference for an antidepressant or psychological counseling
≥ 20	Severe major depression	Antidepressants alone or in combination with psychological counseling

Note. Adapted from: Chen, T. M., Huang, F. Y., Chang, C., & Chung, H. (2006). Using the PHQ-9 for depression screening and treatment monitoring for Chinese Americans in primary care. Psychiatric Services, 57(7), 976-981.

** A score of 15 or higher warrants a consult to Social Services. Any response other than a "0" on Question 9 should result in an immediate referral to Social Services. Social Services will complete an assessment to identify needed services and make appropriate recommendations and/or referrals. This tool is meant to be used as a guideline for evidence-based treatment for depression. No matter what the patient scores on the PHQ-9, please continue to use your professional judgment regarding affect, behavior, or an overall sense of issues during your assessment. If in doubt, contact Social Services for assistance.

- Springfield Social Services: 507-723-7783. Available Monday through Friday from 8:00 a.m. to 4:30 p.m. If after hours, you can leave information on the social worker's voice mail for non-emergent situations and the social worker will follow up with the patient.
- For emergency situations when Springfield Social Services is not available, contact: Mankato Emergency Department Social Services (24/7): 507-779-9075.

Conclusion

The PHQ-9 is a reliable, valid and effective tool that can be used in primary care clinical settings to both screen for major depression and to monitor changes in mood over time. It can also be used effectively across cultures, keeping in mind the importance of recognizing cultural differences that could sway results on the PHQ-9. Providing consistent follow up to patients regarding their PHQ-9 score and implementing appropriate interventions can make and effective difference in the recognition and management of depressive symptoms and disorders. Collaboration between the primary care provider and a mental health practitioner is one way to increase follow up and care for those suffering from depression.

Recommendations

The nursing staff at Mayo Clinic Health System – Springfield requested that the information be presented to the Medical Staff Board prior to implementation to get the medical providers involved in using the Standard of Care as well.

References

References available upon request.