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Comparing and Contrasting Depression Screening Instruments for Use Among Adolescents in Primary Care

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Background

Depression prevention is vital to improving a patient’s quality of life. By 2020, depression is expect to be a leading cause of worldwide death and disability (Huang, Chung, Kroenke, Delucchi, & Spitzer, 2006). The Centers for Medicaid and Medicare Services (CMS) and The U.S. Preventive Services Task Force (USPSTF) encourage annual depression screenings. Notably, “The U.S. Preventive Services Task Force (USPSTF) recommends screening adolescents (12 to 18 years of age) for major depressive disorder (MDD) when systems are in place to ensure accurate diagnosis, psychotherapy (i.e., cognitive behavioral or interpersonal) and follow up” (U.S. Preventive Services Task Force, 2010, p. 178).

Lehigh Valley Physician Group (LVPG) is investigating an age appropriate depression screening instrument that accurately detects adolescent depression in primary care settings. Best practice can be achieved by meeting the network goal of providing better cost, better care, and better health to patients served. Quantified, the overall benefit of meeting the Triple Aim is improved patient outcome. Selecting a depression screening instrument that is reliable, valid, and “should ideally have both a high sensitivity and a high specificity in order to reduce the number of false-negatives and false-positives” is necessary (Wittkamp, Naeije, Schene, Huyser, & van Weert, 2007, p. 388). “To be acceptable in practice, instruments must be valid, reliable, brief, and easy to use” (Gilbody, Richards, Brealey, & Hewitt, 2007, p.1596).

The following depression screening instruments and a series of recommendations are discussed in this paper:

- The Patient Health Questionnaire-9 Item (PHQ-9)
- The Patient Health Questionnaire for Adolescents (PHQ-A)
- The Beck Depression Inventory-II (BDI-II)
- The Beck Depression Inventory for Primary Care (BDI-PC)
- The Guidelines for Adolescent Preventive Services (GAPS)

Methodology

From June 8, 2015-July 13, 2015, literature addressing instruments used for adolescent depression screening instruments were retrieved for analysis. Databases searched include: CINAHL, HAPI, Medline, PubMed, EBSCO, Pediatrics, and Science Direct. Key search terms included: *adolescence, adolescent depression, depression, depression screening, depression measurement, mood module, Patient Health Questionnaire, PHQ, Patient Health Questionnaire-9 Item, PHQ-9, Patient Health Questionnaire for Adolescents, PHQ-A, Beck Depression Inventory, BDI, Beck Depression Inventory for Primary Care, BDI-PC, Beck Depression inventory-II, BDI-II, Guidelines for Adolescent Preventive Services, and GAPS.*

Initially, search settings were not placed for patient race or ethnicity, culture, type of care setting, nor age of patients aged 12 to 17 years. Limiting age and type of care setting searched was necessary to acquire additional evidence specifically aimed at screening for adolescent depression. Two Lehigh Valley Health Network (LVHN) medical librarians were consulted as experts for refining the search. Furthermore, this author collaborated with the LVPG Clinical Quality Educator to review data reflecting individual compliance with annual depression screening in primary care. Subsequent discussions emphasized the need for standardized annual depression screening in LVPG primary care practices. An evidence table was constructed. Rating the level of evidence assisted in identifying the most valid and reliable data. This author and mentor met weekly to review research and examine findings.

Beck Depression Inventory-II (BDI-II)

Self-Administered
Evolved from the BDI
DSM-IV Criteria for Depression
21 Questions
Includes Somatic Symptoms
Symptoms rated for the last 2 weeks, including the day of the screening
For patients 13 years and older (Dolle et al., 2012)
(Kung et al., 2013)

Beck Depression Inventory for Primary Care (BDI-PC)

Self-Administered
Evolved from the BDI-II
DSM-IV Criteria for Depression
7 Questions
Less Focus on Somatic Symptoms
Symptoms rated for the last 2 weeks, including the day of the screening (Dolle et al., 2012)
(Steer et al., 1999)
(Winter, Steer, Jones-Hicks, & Beck, 1999)

Guidelines for Adolescent Preventive Services (GAPS)

Series of recommendations for primary care
Assesses adolescent risk
Recommendations for:
Immunizations
Detecting behavioral problems
Conducting annual screenings
Promoting healthy living (Gadomski, Scribani, Krupa, & Jenkins, 2014)
(Levenberg, 1998)

Patient Health Questionnaire-9 Item (PHQ-9)

Self-Administered
Evolved from the PHQ
DSM-IV Criteria for Depression
9 Questions
Measures functional impairment
Symptoms rated for the 2 weeks prior to screening
Diagnostic and Severity Measure
Cutoff Score 10+ Recommended for MDD
Current standard adult depression screening instrument in LVPG
(Kroenke, Spitzer, & Williams, 2001)
(Kung et al., 2013)
(Manea, Gilbody, & McMillan, 2015)
(Wittkamp et al., 2007)

Patient Health Questionnaire for Adolescents (PHQ-A)

Self-Administered
Evolved from the PHQ
Detects mental disorders
DSM-IV Criteria for Depression
PHQ-A Questionnaire (PHQ-9 Modified for Adolescents) is 9 Questions
Measures functional impairment
Assesses suicidal ideation and attempts
Symptoms rated for the 2 weeks prior to screening
(Johnson et al., 2002)

Recommendations

Minimal amounts of literature were found using the PHQ-A, PHQ-9, BDI-II, and BDI-PC depression screening instruments among adolescents. Next steps should include consulting subject matter experts, including adolescent health, behavioral health, and pediatric healthcare professionals is advised before implementing a standard adolescent depression screening instrument in LVPG primary care. Collaborating with these healthcare professionals can provide additional insight into providing quality care for the target age range, patients age 12 to 17. Expert advice, time restraints, and languages spoken by the population served, among other factors, may influence the selection of the instrument chosen for LVPG primary care.

Discussion

The PHQ-A, PHQ-9, BDI, and BDI-PC have proven to be valid and reliable instruments available to screen for adolescent depression. They have similar times to complete and score. They also have comparable statistics. Translated versions of the BDI-II, BDI-PC, and the PHQ-9 do exist. These instruments have been used among patients of different race and culture. Each instrument reports higher rates of depression among female patients.

There are a few differences between these instruments.. The PHQ-9 and PHQ-A are free to use, whereas the BDI-II and the BDI-PC must be purchased. The PHQ-A was developed exclusively for an adolescent population and asks questions about suicidal ideation and attempts. The BDI-II takes longer to complete than the other instrument. Although the BDI-PC may be more useful since it has fewer questions and takes less time to complete, the PHQ-9 is the current adult standard depression screening instrument in LVPG. Medical professionals are already familiar with this depression screening instrument and may require less time to develop competency using the PHQ-9. Therefore, medical professionals who have already developed competence using the PHQ-9 may readily transition to using this instrument among adolescent primary care patients.

Depression Screening Instrument	Sensitivity	Specificity	AUC
PHQ-A	0.73	0.94	-
PHQ-9	0.77 0.85 (Cutoff 11) 0.895 (Cutoff 11)	0.94 0.89 (Cutoff 11) 0.775 (Cutoff 11)	0.95 0.88 (Cutoff 11)
BDI-II	1.0 (Cutoff 10)	0.7 (Cutoff 10)	0.96 0.93
BDI-PC	0.91 0.97	0.91 0.99	0.98 0.99

Table 1. Depression Screening Instrument Statistics
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