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REVIEW

Screening instruments for depression in primary care: a concise review for clinicians

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Abstract

Depression is prevalent across the life span worldwide. It is a common problem encountered in primary care settings. The World Health Organization recommends the integration of mental health into general health care in order to seal the existing gap between the number of patients who need mental health care and those who actually receive it. Addressing the burden of mental health problems in primary care settings has its limitations, particularly because of the time constraints in busy primary care clinics as well as the inadequate training of staff and physicians in mental health disorders. That is why reliable, brief, and easy to administer depression screening instruments are important in helping physicians identify patients at risk. The 2-item Patient Health Questionnaire (PHQ-2) is a suitable primary screening tool for depression. If positive, other tools should be administered, such as the PHQ-9 in adults, the PHQ-9 or Geriatric Depression Scale-15 in older adults, or the Arroll's help question or the Edinburgh Postnatal Depression Scale in ante- or postpartum women. Patients with positive scores ought to be interviewed more thoroughly. Computerized depression screening instruments that are interfaced or integrated into electronic health records seem to be promising steps toward optimizing diagnosis, treatment, and follow-up. The availability of adequate management and follow-up are ethical requirements for the utilization of any screening instrument for depression.

Keywords:

case finding, depressive disorder, depression questionnaires, mental health

History

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Introduction

Mental health conditions and disorders are prevalent worldwide. They often present at an early age and are commonly associated with considerable family, social, and vocational impairment [1-3], as well as an increased economic burden [4]. As reported by the World Health Organization's (WHO) World Mental Health surveys, mood disorders, particularly depression, are the second most prevalent mental disorders in the general population, subsequent to anxiety disorders [1]. The lifetime and 12-month prevalence rates of depression are estimated to be around 12% and 6%, respectively [1]. Moreover, depression is predicted to become the world's second most disabling disease by the year 2020, following cardiovascular diseases [5].

The prevalence of major depressive disorder (MDD) among adult patients in primary care ranges from 5% to 13% [6]. One third to one half of adults and around two thirds of patients aged > 65 years who receive treatment for MDD are managed by primary care physicians (PCPs) [6]. It is important to note that depression symptoms and severity, among patients treated by PCPs, are almost comparable to those of patients being treated by psychiatrists [6]. Nevertheless, many patients with depression often go undiagnosed and undertreated after visiting their PCPs because PCPs lack sufficient training in mental health disorders [4] or because of time constraints in busy primary care settings. In addition, only 30% to 50% of mental health conditions are detected at the primary care level, as the majority of patients with anxiety or depression present with nonspecific somatic complaints [4,7,8].

In view of these findings, the WHO recommends the integration of mental health into general health care in order to seal the existing gap between the number of patients who need mental health care and those who actually receive it [9].

The existing literature lacks an updated comprehensive document that overviews the existing depression screening recommendations and instruments specifically available for PCPs. This review is designed to address this gap.

Materials and methods

A review of the literature was conducted in order to examine the existing depression screening recommendations and to discuss the depression screening instruments most recommended in primary care. The majority of the depression screening tools mentioned in this review can be downloaded for free (Table I).

Guidelines for depression screening

The United States Preventive Services Task Force (USPSTF) recommends screening for MDD among adolescents (aged

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Table I. Screening instruments for depression available online.

Instrument	Public domain?	Website for English-language version
BDI-II	No	http://www.pearsonclinical.co.uk/Psychology/AdultMentalHealth/AdultMentalHealth/AdultMentalHealth.aspx
BDI-PC	No	http://www.pearsonclinical.co.uk/Psychology/AdultMentalHealth/AdultMentalHealth/AdultMentalHealth.aspx
CESD-10	Yes	https://www.fstrf.org/apps/cfmx/apps/common/QOLAdherenceForms/resources/actg/forms/english/qlw0067.pdf
CESD-20 or CES-D 20	Yes	http://depression-help-resource.com/cesd-depression-test.pdf or http://cesd-r.com/
EPDS	Yes	http://health.utah.gov/mihp/pdf/EPDS.pdf
GDS-5	Yes	http://www.darmipc.net/uploads/1/6/0/0/1600880/geriatric_depression_scale_five_item_version.pdf
GDS-15	Yes	http://www.stanford.edu/~yesavage/GDS.html; http://depression-help-resource.com/geriatric-depression-scale.pdf
GDS-30	Yes	http://www.stanford.edu/~yesavage/GDS.html; http://depression-help-resource.com/geriatric-depression-scale.pdf
GHQ-12	No	http://www.gl-assessment.co.uk/products/general-health-questionnaire-0
GHQ-28	No	http://www.gl-assessment.co.uk/products/general-health-questionnaire-0
GHQ-30	No	http://www.gl-assessment.co.uk/products/general-health-questionnaire-0
HADS	Yes	http://www.sandbachgps.nhs.uk/uploaded_files/files/ashfields/HADS.pdf
K10	Yes	http://www.hcp.med.harvard.edu/ncs/k6_scales.php
K6	Yes	http://www.hcp.med.harvard.edu/ncs/k6_scales.php
PHQ-2	Yes	http://www.phqscreeners.com/
PHQ-9	Yes	http://www.phqscreeners.com/
PHQ-A or PHQ-9A	Yes	http://www.uwlax.edu/conted/wspa/handouts/2013WSPAspringHalleyPHQ-9A.pdf
RADS (30-item)	No	http://www4.parinc.com/Search.aspx?q=Reynolds%20Adolescent%20Depression%20Scale
RADS-2 (30-item)	No	http://www4.parinc.com/Search.aspx?q=Reynolds%20Adolescent%20Depression%20Scale
RADS-2 SF (10-item)	No	http://www4.parinc.com/Search.aspx?q=Reynolds%20Adolescent%20Depression%20Scale
WHO-5	Yes	http://www.dawnstudy.com/News_and_activities/Documents/WHO-5.pdf
Zung SDS	Yes	http://depression-help-resource.com/zung-depression-scale.pdf

Abbreviations: BDI = Beck Depression Inventory (PC = Primary Care); CESD = Center for Epidemiological Studies Depression; EPDS = Edinburgh Postnatal Depression Scale; GDS = Geriatric Depression Scale; GHQ = General Health Questionnaire; HADS = Hospital Anxiety and Depression Scale; K = Kessler Psychological Distress Scale; PHQ = Patient Health Questionnaire; RADS = Reynolds Adolescent Depression Scale; WHO-5 = WHO-5 Well-Being Index; Zung SRD = Zung Self-Rated Depression Scale.

12−18 years) and adults (aged ≥ 18 years) in clinical settings that have systems in place to ensure accurate diagnosis, adequate management, and follow-up [10,11]. The United Kingdom National Institute for Health and Clinical Excellence (NICE) recommends being alert for possible depression among adults with a past history of depression, or those with a chronic physical health problem [12,13]. The Canadian Task Force on Preventive Health Care recommends screening in primary care settings for adults at average risk, such as those with a family history of depression or with chronic health problems [14].

As for the concept of repeated screening for depression in patients at high risk, and despite the positive discretions toward it, there is no research that supports this approach [10,11].

Depression screening instruments in primary care

A number of depression screening or case finding instruments have been validated and made available to facilitate both clinical and research tasks of PCPs (Tables I and II). Nevertheless, more than half of the patients with positive screening results do not meet the diagnostic criteria for MDD [6]. This means that positive results on a screening instrument do not confirm the presence of depression and instead mandate more extensive confirmatory interviewing [6]. This controversy is a major reason for the lack of consensus on the value of screening tools. Moreover, depression screening instruments assess symptoms of depression over the past weeks, and thus can fail to detect chronic depression.

As O'Connor et al [6] report, "most of the available depression screening instruments have a relatively good sensitivity (80%−90%) but only fair specificity (70%−85%)". Nevertheless, these screening instruments are yielding different findings among different populations, thus making the generalization across studies difficult. [8,11,15]. A structured clinical interview (eg, using the *Diagnostic and Statistical Manual of Mental Disorders* [DSM] criteria) remains the gold-standard method for the assessment of depression, MDD, dysthymia, bipolar disorder, and comorbidities such as anxiety disorders and substance abuse [10,11]. However, direct face-to-face interviews are time-consuming, thus limiting their utility in primary care settings.

To become acceptable for use in medical practice, screening instruments must be valid, reliable, brief, easy to administer [16], available at a low cost or even free of charge, and effective in achieving improved clinical outcomes [4]. The cost issue is resolved through self-administered instruments that require a brief period of time for patients to complete and for practitioners to review [8]. Self-administered screening instruments would be more beneficial if they could also be verbally administered, in order to cater to illiterate or physically disabled patients.

Depression screening instruments for adults (Table II)

In 2009, the USPSTF did not recommend a specific screening method but only mentioned some available depression screening instruments [10], such as the Beck Depression Inventory (BDI) [17,18]; the Zung Self-Assessment Depression Scale (ZSDS) [19]; the General Health Questionnaire (GHQ) [20,21], which includes items for nonspecific psychological distress; the Center for Epidemiologic Study Depression Scale (CES-D) [22,23]; in addition to SelfCARE (D) [24] and the Geriatric Depression Scale (GDS) [25-27],

Table II. Screening instruments for depression in adolescents, adults, and the elderly (reading level ≥ 6th grade).

Screening instrument and reference	Age appropriateness (age in years)	No. of items	Time frame	Score range	Scoring	Usual cutoff point recommended by authors of the instruments	Time to complete (approximate per minutes)
For depression							
PHQ-2 (verbally administered) [32]	≥ 13 (adolescents, adults, older adults)	2	Past 2 weeks	0–2	0 (no), 1 (yes)	1	< 2
PHQ-2 (self-administered) [34]	≥ 13 (adolescents, adults, older adults)	2	Past 2 weeks	0–6	0 (not at all) to 3 (nearly every day)	≥ 3	< 2
PHQ-9 (self-administered) [33]	≥ 13 (adolescents, adults, older adults)	9	Past 2 weeks	0–27	0 (not at all) to 3 (nearly every day)	≥ 10	< 5
WHO-5 [8,55]	Adults, older adults	5	Past 2 weeks	0–25	0 (not present or at no time) to 5 (constantly present or all of the time)	≤ 13	< 5
BDI-II[a] [18]	≥ 13	21	Past 2 weeks	0–63	0 (symptom not present) to 3 (symptom strongly present)	≥ 20	5–10
BDI-PC[a] or BDI-FS[a] [17]	≥ 13	7	Past 2 weeks	0–21	0–3	≥ 4	< 5
CESD-20 or CES-D 20 [22] Revised CESD-20 [23]	≥ 13	20	Past week	0–60	0 (rarely or none of the time or < 1 day) to 3 (most or all of the time or 5–7 days)	≥ 16	5–10
CESD-10 [89]	≥ 14	10	Past week	0–30	0 (rarely or none of the time or < 1 day) to 3 (most or all of the time or 5–7 days)	≥ 10	< 5
Zung SDS [19]		20	Past several days	25–100	—	≥ 55 in primary care; ≥ 40 in elderly people	< 5
HADS [71]	16–65	7 + 7	Present	(0–21) + (0–21)	0–3 (yes definitely, yes sometimes, no not much and no not at all)	≥ 8	5
GDS-30 [25]	≥ 55	30	Past week	0–30	0 (no), 1 (yes)	≥ 11	10–15
GDS-15 or GDS-S [27]	≥ 55	15	Past week	0–15	0 (no), 1 (yes)	≥ 3 or 5	5–7
GDS-5 [61,62]	≥ 55	5	Past week	0–5	0 (no), 1 (yes)	≥ 2	1
SelfCARE (D) [24]	> 65	12	Past month	0–12	Likert scale	≥ 5	< 5
EPDS [70]	Peripartum women	10	1 week	0–30	0–3	≥ 10	5
For nonspecific psychological distress							
GHQ-28[a] [20,21]	≥ 11	28	Past few weeks	0–28	0–1 (less than usual, no more than usual, rather more than usual, or much more than usual)	4	10–12
GHQ-12[a] [20,21]	≥ 11	12	Past few weeks	0–12	0–1 (less than usual, no more than usual, rather more than usual, or much more than usual)	≥ 3	< 5
K10 [90]	≥ 13 (adolescents, adults, older adults)	10	Past 4 weeks	0–40	0 (none of the time) to 4 (all the time)	≥ 9	3
K6 [90]	≥ 13 (adolescents, adults, older adults)	6	Past 4 weeks	0–24	0 (none of the time) to 4 (all the time)	≥ 5	2

[a]For fees.

Abbreviations: BDI = Beck depression inventory; CESD or CES-D = Center for Epidemiological Studies Depression; EPDS = Edinburgh Postnatal Depression Scale; GDS = Geriatric Depression Scale; GHQ = General Health Questionnaire; HADS = Hospital Anxiety and Depression Scale; K = Kessler Psychological Distress Scale; PHQ = Patient Health Questionnaire; WHO-5 = WHO-5 Well-Being Index; Zung SRD = Zung Self-Rated Depression Scale.

which were specifically developed for older adults. The 2009 USPSTF review also reported that there is little evidence to recommend one screening method over another, and that clinicians may choose the method most consistent with their personal preference, the patient population being served, and their practice setting [10].

The latter review also considered that the "verbally administered" 2-item Patient Health Questionnaire (PHQ-2) for depressed mood (ie, sad mood) and anhedonia (ie, diminished interest or pleasure in activities), which was validated in different studies [28,29], may be as effective as more extensive instruments [10]. This assertion was supported by the NICE's guidelines for dealing with patients at risk [30], as well as by a recent meta-analysis of 113 studies conducted by Meader et al, [31] who reported that optimal screening for depression in patients with chronic medical problems was achieved by the 2-item PHQ-2 [28,29,32], the 9-item PHQ-9 [33], the 28-item GHQ-28 [20,21], and the ZSDS [19]. The first 3 instruments were the most sensitive, whereas the ZSDS was the most specific [31].

Though the 2-item screening instrument (PHQ-2) seems to be the preferred method, it is important for clinicians to further assess patients who score positively [31]. The recommended cutoff score for MDD among adult outpatients aged ≥ 18 years is ≥ 1 for the "verbally administered" PHQ-2 (where the answer for each question is yes or no) [28,29,32], and ≥ 3 for the "self-administered" PHQ-2 (where the answer for each question is rated from 0 to 3; sensitivity, 83%; specificity, 92%) [33,34]. Yet, as per other authors' suggestions, the latter's cutoff score can be ≥ 2 (sensitivity, 86% and 81%; specificity, 78% and 76% in 2 studies, respectively) [35,36].

The PHQ-9 was found by various meta-analyses to have a good sensitivity and specificity in primary cares settings [37-39]. Yet similar to the case of the PHQ-2, the recommended optimum cutoff point for the PHQ-9 varied between countries and settings (ie, community care, primary care, and non–primary care settings) [37], as well as with the criterion of blind application of a diagnostic gold standard [38]. The PHQ-9 is thought by some to be the gold-standard depression screening instrument for primary care [40]. However, these findings regarding the PHQ-9 were reported prior to the development of the PHQ-2, which is composed of the first 2 questions of the PHQ-9. A PHQ-9 score ≥ 10 was found to be less sensitive but more specific than a PHQ-2 score ≥ 2 (sensitivity, 74% and 86%, respectively; specificity, 91% and 78%, respectively) [35]. The authors of a meta-analysis of 113 studies did not advocate relying on single-question tools, and recommended 2 questions as a minimum for a screening instrument [33]. However, 2- or 3-question screening tests result in a high false-positive rate, whereby only 4 of 10 cases with a positive score are actually depressed. Therefore, such tools should be used only to rule out depression, and only when adequate resources are available for further assessment and treatment [41].

Other short depression screening instruments have been developed and validated in primary care settings; these include the WHO's Well-Being 5-item Index (WHO-5 or WBI-5) [9,42-47], the BDI Fast Scan, formerly known as the BDI Primary Care (7 items) [17,48-51], and the Hospital Anxiety and Depression Scale (HADS; 14 items) [9,52-54]. The brevity of the PHQ-2 and the costs incurred by the BDI make the former more appealing. Henkel et al [42] found that with standard cutoff points, the PHQ-2 was less sensitive but significantly more specific than the WHO-5 and the GHQ-12.

The WHO-5 has been widely used to screen for depression among adults and elderly patients in primary care and was found to have acceptable psychometric properties even among older adults [9,42-47]. Its sensitivity and specificity were evaluated among primary care patients and were reported to be optimal for a cutoff score ≤ 13 (93% and 64%, respectively) in 1 study [42], a cutoff score ≤ 7 (94% and 78%, respectively) in another study [9], and a cutoff score of ≤ 11 (77% and 89%, respectively) in a third study [46]. The WHO-5 has been shown to have adequate external and internal validity in detecting depression among older adults in Germany [47]. Henkel et al [55] also reported that, similarly to the PHQ, the WHO-5 could be shortened to 2 items by preserving only items 1 and 3 of its original 5 items (ie, "I have felt cheerful and in good spirits" and "I have felt active and vigorous"), such that it becomes easier to administer and score. A cutoff score ≤ 5 was considered to be positive and was found to have a good sensitivity of 90.3% and a specificity of 61.8% among primary care patients, compared with the sensitivity and specificity of the original 5-item version with a cutoff score ≤ 13 (93% and 64%, respectively), and to the PHQ-2 with a cutoff score ≥ 4 (91.7% and 59.1%, respectively). The 2-item version of the WHO-5 thus warrants further investigation.

Finally, Löwe et al [8] compared 3 instruments in outpatient clinics and family practices and found that, for MDD, the operating characteristics of the PHQ-9 were significantly superior to those of both the WHO-5 and the HADS.

Further details about the depression screening instruments are listed in Table II.

Depression screening instruments for special or subpopulations (Table II)

Elderly

In a systematic review evaluating 9 screening instruments for late-life depression in primary care, Watson and Pignone [56] reported that the sensitivity and specificity of the most commonly used instrument, namely the 15-item GDS, vary from 82% to 100% and 72% to 87%, respectively. The CES-D was found to have a sensitivity of 74% to 93% and a specificity of 70% to 87%. The SelfCARE (D) sensitivity ranged from 77% to 95% and its specificity from 53% to 98%. Watson and Pignone recommended the use of the GDS-15 because of its easy yes/no self-administered format and its long-standing success in identifying MDD in primary care as well as in psychiatric and hospital settings [56]. Watson et al [57] concluded that the measures being used by caregivers in order to assess for depression were not adequately detecting depression.

The PHQ-2, on the other hand, seemed to be the most suitable screening tool in terms of its brevity, sensitivity, and

simple administration [57]. The sensitivity and specificity of the verbally administered PHQ-2 (ie, a "yes" response to either question) using the DSM-IV criteria for MDD [58] was shown to be 100% and 77%, respectively, among older adults (aged ≥ 65 years) [59]. The American Geriatrics Society recommends using the PHQ-2 as a first-step screening test for depression in older adults, and, if positive, then using the GDS-15 or the PHQ-9 as a follow-up test [3]. A recent meta-analysis found that the GDS-15, which takes about 5 to 7 minutes to complete, is preferred over the GDS-30 for screening for late-life depression in primary care settings [60]. A short version of the GDS (the 5-item GDS) was found to be as effective as the 15-item GDS (sensitivity, 91% to 98%; specificity, 75% to 87%) [61,62].

Adolescents

The 30-item and 10-item versions of the Reynolds Adolescent Depression Scale (RADS) are among the few depression screening measures specifically developed for adolescents. The 30-item version requires 10 to 15 minutes to complete and the 10-item, 2 to 3 minutes. Both scales were validated in large adolescent population samples in New Zealand [63,64].

The CES-D, which is a public domain scale, and the BDI, which is less expensive than the RADS, have comparable psychometric properties, are easy to score, and are comparable for use among adolescents. However, the RADS [63,64], CES-D [22], and BDI [17,18] have been primarily used for research purposes and not in primary care settings; thus, they should not be used as routine screening instruments for depression among adolescents [65]. However, they may be used to monitor treatment response in adolescents already diagnosed with depression [65].

In a systematic evidence review for the USPSTF, Williams et al [66] reported good sensitivities and specificities for 2 screening instruments among adolescents in primary care settings, namely the 9-item PHQ-9 modified for adolescents (PHQ-9A), with a sensitivity of 73% and specificity of 94% [67], and the BDI Primary Care [17,47-50], with a sensitivity of 91% and a specificity of 94% [66]. Despite the limited availability of data on screening instruments for adolescents in primary care settings, it seems that these instruments may accurately identify depression among adolescents for whom treatment can render better outcomes. [66]

Finally, the sensitivity and specificity of the PHQ-2 cutoff score ≥ 3, using the DSM-IV criteria for MDD among adolescents aged between 13 and 17 years, were recently found to be 74% and 75%, respectively [68]. In other words, negative PHQ-2 scores cannot exclude the presence of depression in adolescents (unlike in adults), and positive scores do not confirm the presence of depression in either age group [68].

Peri- and postpartum

The USPSTF reviews in 2002 and 2009 did not include any special recommendation for pregnant women; hence, what applies for screening for depression in adults or adolescents would apply for pregnant women [10,11]. However, the NICE's 45th clinical guidelines [69] on mental health problems during pregnancy and postnatally recommended offering women the verbally administered PHQ-2. In the case of a positive answer to either of the 2 items, the "help question," developed by Arroll et al [29], can be asked: "Is this something with which you would like help?" [29,32,70]". Women are considered to have probable depression if they responded to the help question either by wanting help but not today or by wanting help today. Depression is also a possibility if there was a positive answer to either 1 or both screening questions plus the help question [29].

In addition, self-reporting instruments that can be used include the Edinburgh Postnatal Depression Scale (EPDS) [70], the HADS [71], and the PHQ-9 for subsequent assessments after positive screening findings [12]. The EPDS was also recommended by the Australian National Perinatal Depression Initiative as part of the routine screening of all women in the antenatal and postnatal periods [72].

In their review article, Sharp and Lipsky [65] reported that the BDI [17,18], CES-D [16], and EPDS [70] have been used to screen for antenatal and postnatal depression (AND and PND); however, both the BDI and CES-D have a tendency for more false-positive results among symptomatic pregnant women [65].

As with different age groups, some researchers recommend a 2-stage screening process, whereby patients are initially screened using a 2-question screening instrument, and those who respond positively to either one or both questions are then provided with a longer instrument to complete [40].

The PHQ-2, which has been advocated as a quick screen, was found to have very good construct and criterion validity in obstetrical/gynecology clinics [34]. The PHQ-9 has also been effectively used as a screening instrument in obstetrics/gynecology practices among women of childbearing age [73]. However, there are no readily available published reports on the validity of the PHQ-2 or the PHQ-9 in screening for PND.

Boyd et al [74] reviewed 36 studies on PND screening and concluded that the EPDS is the most investigated postnatal screening instrument with moderate psychometric soundness. A score of ≥ 10 on the EPDS is recommended to detect PND (Table II) [70].

The published review articles about AND and PND screening highlighted that the studies reviewed had small sample sizes [75,76]. Therefore, additional studies using large representative samples are needed to identify the ideal screening instrument for AND and PND [74,77-79]. Gaynes et al [78] recommend that further studies should also provide a more representative racial and ethnic mix.

Advanced technology and depression screening instruments

Over the past 30 years, several studies have demonstrated the feasibility and the good psychometric properties of different forms of automated depression screening (eg, clinical interview by telephone, interactive voice response, computer

touchscreen, and computer voice recognition) [80]. Different computer-administered depression screening instruments have been validated; the latter include instruments such as the Primary Care Evaluation of Mental Disorders (also known as PRIME-MD), PHQ-9, GDS-15, the revised version of the CES-D-20 (CES-DR-20), and the Edinburgh Depression Scale [80-84]. Moreover, online screening instruments that can be accessed via web browsers or smart devices, and perhaps include advanced options such as speech recognition options, now seem to hold the best potential [80]. For example, an online version of the PHQ-9 is available through the website of the United Kingdom's National Health Service [85], along with a permission to embed it into any other site.

The utilization of an electronic health record (EHR) system would enhance communicating screening results to the physician in a timely and efficient manner, and thus optimize diagnosis, treatment, and follow-up [86-88]. A depression screening instrument, such as the PHQ-9, which could be interfaced with, or embedded into, an EHR system would be an optimal solution. This would enable the patient to complete an electronic screening questionnaire in privacy, the results of which are automatically integrated into the EHRs and made available upon the encounter with the physician. This proposed solution not only saves time, but also minimizes the number of staff involved in the screening process [80,86]. However, it is of critical importance for health care providers and EHR administrators to ensure that a patient's screening results are reviewed promptly, particularly for critical or alarming responses related to suicidal ideation that necessitate immediate action (eg, a positive response to question 9 on the PHQ-9).

Conclusion

As demonstrated throughout this review, the diagnostic sensitivity and specificity of the various self-rated screening instruments for depression have varied within and between settings. Thus, clinicians need to be very careful when making the choice of a screening instrument, as it is important to take into careful consideration the characteristics of the population as well as the value of screening, in terms of the foreseen outcomes. It is important to keep in mind that although some instruments are capable of identifying current emotional disturbances, they can fail to detect chronic illness. Hence, health care providers also need to consider the purpose of the screening in order to select the appropriate instrument.

In primary care settings, the PHQ-2 (whether self- or verbally administered) is an appropriate first choice for screening for depression, yet it needs to be followed by the administration of the PHQ-9 in adults, the PHQ-9 or GDS-15 in older adults, or by Arroll's help question and the EPDS in ante- or postpartum women in case of positive findings. Using self- or verbally administered depression screening instruments is not a matter of self-preference but a matter of convenience, given the setting, resources, and the circumstances available for the health care provider. Adequate management and follow-up are ethical prerequisites for the utilization of any screening instrument for depression. Moreover, using the recommended depression screening instruments followed by a thorough interview was shown to be associated with better detection of patients with depression.

Finally, computer-assisted depression screening instruments, particularly those supplied with computerized voice recognition options, can be of great support, especially if they are interfaced with or embedded into the EHR system, as they would serve to enhance the communication of screening results to the physician in a timely and efficient manner, and thus optimize diagnosis, treatment, and follow-up.

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