An overview of depression in women: Through the lifespan

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Intended audience
Nurse practitioners (NPs), nurse-midwives, and other advanced practice clinicians who care for women.

Continuing education (CE) approval period
Now through November 30, 2015

Estimated time to complete this activity
This activity will take 1 hour to complete.

Program description/identification of need
This CE program presents practical strategies to meet the needs of NPs, nurse-midwives, and other advanced practice clinicians who provide primary care for women. The program will help clinicians identify women who have risks for depression and describe various approaches to treatment.

Depression, which can occur at any time throughout the lifespan, poses a major public health problem in the United States because of its high overall prevalence and associated disability. Prevalence of depression is higher in women than in men (21% vs. 13%). In addition, the prevalence of depression and treatment-seeking behaviors may differ among ethnic groups. The financial burden of depression was about $83.1 billion in 2000. Of the 2000 total, $26.1 billion were direct medical costs, $5.4 billion were suicide-related mortality costs, and $51.6 billion were workplace costs.

Educational objectives
- Identify *DSM-5* diagnostic criteria for the various forms of depression and be able to distinguish among them.
- Describe recommended screening tools and management approaches, including pharmacotherapeutic options, for depression in women.
- Define special management considerations for the different forms of depression that affect women throughout the lifespan: premenstrual dysphoric disorder, perinatal depression, postpartum depressive disorders, and depression during perimenopause.

Approval statement
This NPWH activity, J-14-11, has been evaluated and approved by the Continuing Education Approval Program of the National Association of Nurse Practitioner in Women's Health for 1 contact hour of CE credit, including 1 contact hour of pharmacology content. Each participant should claim only those contact hours that he/she actually spent in the educational activity.

Faculty disclosures
NPWH policy requires all faculty to disclose any affiliation or relationship with a commercial interest that may cause a potential, real, or apparent conflict of interest with the content of a CE program. NPWH does not imply that the affiliation or relationship will affect the content of the CE program. Disclosure provides participants with information that may be important to their evaluation of an activity. Conflict of interests were resolved according to NPWH policy prior to development of content.

According to their disclosure statements, none of the authors have any financial interest in or other relationship with any commercial product named in this article.

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NPWH policy requires authors to disclose to the participant when presenting information about unlabeled use of a commercial product or device or an investigational use of a drug or device not yet approved for any use.

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The participating faculty determine the editorial content of the CE activity; the content does not necessarily represent the views of NPWH. This content has been peer reviewed for validation of clinical content. Although every effort has been made to ensure that the information is accurate, clinicians are responsible for evaluating this information in relation to generally accepted standards in their own communities and integrating the information in this activity with those of established recommendations of other authorities, national guidelines, FDA-approved package inserts, and individual patient characteristics.

Successful completion of this activity
Successful completion of this activity, J-14-11, requires participants to (a) read the learning objectives, disclosures, and disclaimers; (b) study the material in the learning activity; (c) during the approval period (now through November 30, 2015), 1. click on the link to the course and log on to the NPWH Online Continuing Education Center NPWH Online Continuing Education Center[A]; 2. complete the online posttest and evaluation; and 3. earn a score of 70% or better on the posttest.

Commercial support
No commercial support was supplied for this activity.

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Before reading the article, *click here*[A] to take the pretest.

To provide a quick and useful review of depression in women, the authors provide up-to-date information about risk factors, diagnosis, screening techniques, and management, and they discuss special considerations and the relationship between depression and various life stages. In addition, the authors include their own helpful tips for the management of depression in women.

KEY WORDS: **depression, major depressive disorder, premenstrual dysphoric disorder, antidepressants, depression and female life stages**

Depression, which can occur at any time throughout the lifespan, poses a major public health problem in the United States because of its high overall prevalence and associated disability.[1,2] The prevalence of depression is higher in women than in men (21% vs. 13%).[3] In addition, the prevalence of depression and treatment-seeking behaviors may differ among ethnic groups.[4] The financial burden of depression was about $83.1 billion in 2000.[5] Of the 2000 total, $26.1 billion (31%) were direct medical costs, $5.4 billion (7%) were suicide-related mortality costs, and $51.6 billion (62%) were workplace costs.

Risk factors

Common risk factors for depression include a family history of depression or personality disorder, living in a dysfunctional family environment, having a history of physical or sexual abuse as a child, and loss of a parent at an early age.[3,4,6] According to cognitive theory, a lack of effective coping skills or an inability to problem-solve can be a risk for depression.[1,7] Women are at greater risk for depression if they experience an unexpected job loss, have family members with health problems, are separated/divorced, or are current victims of domestic violence.[3,4] Another risk factor for depression in women was identified in a large European study: feeling unsafe in one's neighborhood or residence.[8]

Diagnosis

Diagnosis of depression is based on an assessment of a patient's symptoms and an evaluation of her level of functioning and safety risks. According to the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (*DSM-5*),[9] a global resource published by the American Psychiatric Association (APA), a diagnosis of *major depressive disorder* (MDD) is considered if a patient presents with five or more symptoms during a 2-week period that represent a change from previous functioning and at least one of these symptoms is (1) depressed mood or (2) loss of interest or pleasure. Other symptoms of MDD include weight change, either gain or loss; agitation or lethargy; feelings of guilt or worthlessness; recurrent thoughts of death; and diminished ability to concentrate.[9]

Dysthymic disorder, according to the *DSM-5*, is diagnosed when a depressed mood is present for most of the day, for more days than not, as indicated either by subjective account or observation by others, for at least 2 years. In addition to feeling low, dysthymic individuals have two or more of these symptoms: change in appetite, either under-eating or overeating; insomnia or hypersomnia; decreased energy or fatigue; low self-esteem; poor concentration or difficulty making decisions; and feelings of hopelessness. New to the section of depressive disorders in the *DSM-5* are premenstrual dysphoric disorder (PMDD), whose symptoms begin at some point following ovulation and end within a few days of menses and have a major impact on functional status; substance/medication-induced depressive disorders; and depressive disorders due to another medical condition.[9]

Gender differences—Women are more likely than men to present with *atypical* symptoms of depression, including mood reactivity (mood brightens in response to actual or potential positive events), sizable weight gain or increase in appetite, hypersomnia, leaden paralysis (a heavy feeling in the arms and legs), and increased sensitivity to rejection. In addition, women more commonly have somatic complaints such as headaches, chronic fatigue, decreased concentration, poor memory for recent events, slowed thinking,

pain, and gastrointestinal upset.[3,6] Women are less likely than men to display melancholy or catatonic features of depression.

Co-morbidities—Many women with depression have co-morbidities that complicate assessment, treatment, and outcomes. Women with MDD may present with a co-morbid anxiety disorder such as a phobic disorder, panic disorder, or post-traumatic stress disorder (PTSD).[6,10] Depression often accompanies illnesses such as diabetes mellitus, ischemic heart disease, cancer, arthritis, Parkinson's disease, and Alzheimer's disease. These co-morbidities can make depression more difficult to treat.[6]

Suicide—Although women who are depressed are more likely than depressed men to attempt suicide, they are less likely to succeed in the attempt.[11] When they try to kill themselves, women more often use drugs or poisons, whereas men are more likely to choose firearms or hanging.[11]

Targeted screening

Screening for depression in women, particularly when accompanied by accurate diagnosis and appropriate treatment and follow-up, may represent the key to improving outcomes.[12,13] Patient-administered questionnaires are widely used and have varying degrees of effectiveness. Older questionnaires include the Beck Depression Inventory,[14] the Zung Self-Rating Depression Scale,[15] and the Hamilton Rating Scale for Depression.[16] Additional screening tools include the World Mental Health Composite International Diagnostic Interview and the Psychological General Well-Being Schedule: Depressed Mood Subscale.[17,18] These five tools are used less often than newer ones because of the time required to administer them in the ambulatory setting.

The Patient Health Questionnaire (PHQ)-2 and the PHQ-9 are more commonly used to screen for MDD and to evaluate the efficacy of treatment over time.[19] The PHQ-2 tests for the presence of anhedonia and dysphoria. Patients are asked, "Over the past 2 weeks, how often have you been bothered by any of the following problems: little interest or pleasure in doing things; and feeling down, depressed, or hopeless?" Patients answer "not at all," "several days," "more than half the days," or "nearly every day" to each question. If anhedonia and/or dysphoria is present, the lengthier PHQ-9 is given to check for seven additional *DSM-5* depression criteria: insomnia or hypersomnia, fatigue or low energy, poor appetite or overeating, poor self-image, difficulty concentrating, moving or speaking slowly or too fast, and suicidality. The PHQ-9 can be used to monitor depressive symptom severity and treatment response.[19]

NPs must evaluate each patient's mental status and safety during the treatment process and provide education about depression to both the patient and her family members.

Another useful validated rating scale for depression is the 16-item Quick Inventory of Depressive Symptomatology (QIDS).[20] This tool is used to assess the severity of depressive symptoms and symptomatic changes associated with treatment. The QIDS was developed from a 30-item Inventory of Depressive Symptomatology and assesses the nine *DSM-5* diagnostic symptom domains of MDD.[20]

Management

Primary goals of depression management are to achieve a full remission of symptoms; to incorporate a plan for prevention of relapse and recurrence of symptoms; and to re-establish a patient's psychological, social, and vocational balance. The treatment setting and establishment of a therapeutic relationship are important considerations. Nurse practitioners (NPs) must evaluate each patient's mental status and safety during the treatment process and provide education about depression to both the patient and her family members. NPs need to monitor patients closely to ensure adherence to the treatment plan and identify symptoms of relapse. *Table 1* lists APA treatment guidelines for MDD.[9,10]

Either antidepressant medication or psychotherapy is usually considered for patients with mild depression. In terms of antide-

Table 1. Modified APA treatment outline for major depressive disorder[9,10]

Initiation phase (4-8 weeks)

Begin treatment plan

- Use SSRI as initial choice
- Match antidepressant side effects to patient expectations
- Counsel patient on expected side effects and importance of alerting the provider if side effects are intolerable

Reassess in 4-8 weeks

Monitor for adequacy of response

- Danger to self or others
- Response to treatment
- Sign of mania
- Symptoms
- Side effects
- Concomitant mental disorders
- Functional status
- Compliance

No response	*Partial response*	*Full response*
• Change antidepressant • Add or change to psychotherapy	• Change dose • Augment antidepressant	• Go to continuation phase treatment

Continuation phase (16-20 weeks following remission)
Monitor for adequacy of response (as above)
Reassess every 8-12 weeks

- 16-20 weeks following remission, maintain therapy to prevent relapse
- Use same dose in continuation phase as during initiation phase

Maintenance phase

- On average, 50%-80% of patients will have another episode of MDD
- Consider maintenance phase treatment for patients to prevent recurrence of MDD
- In general, use the same full antidepressant dose that was used during prior phase of treatment
- Consider risk of recurrence, severity of episodes, side effects of continuous treatment, and patient preferences

APA, American Psychiatric Association; MDD, major depressive disorder; SSRI, selective serotonin reuptake inhibitor.

pressants, the mechanism of action entails their effect on neurotransmitters such as serotonin, norepinephrine, and/or dopamine. Psychotherapy, including cognitive behavioral therapy, interpersonal therapy, group therapy, and couples therapy, is most effective with patients with minor depression, dysthymia, or PTSD, or as an adjunct to other modalities, including pharmacotherapy.[3,10]

Antidepressants—These agents are the treatment of choice for patients with moderate to severe depression (*Table 2*).[21] Antidepressant efficacy is similar among classes, so the choice of agent is based on anticipated side effects (for example, a medication that has sedative effects may be desirable), patient preference, cost, and the likelihood of patient compliance. According to the results of the STAR*D study, no particular drug choice or combination seemed to have better results in managing recurrent or persistent depression.[2] Once medication is started, patients are closely monitored to assess for efficacy and toxicity. If a moderate improvement in mood is not noted in 6-8 weeks, efficacy of the medication is reassessed.[10]

Research continues with regard to pharmacogenetics—that is, the manner in which genetic makeup can influence response to a medication. Extensive studies with regard to drug metabolism involving cytochrome P450 and the multidrug resistance gene families have shown that women, relative to men, have different adverse-response profiles with respect to antidepressants.[22] Research continues with regard to genetic testing, with the goal of developing the optimal antidepressant based on individual genetic makeup.[22] In addition, the dietary supplements creatine and s-adenosyl methionine (SAMe) are showing promise as adjunctive therapy to standard treatment with selective serotonin reuptake inhibitors (SSRIs).[23,24]

Electroconvulsive therapy—ECT can be useful for patients whose severe MDD symptoms limit their ability to function in daily life. The main side effect is a transient confusional state with memory impairment. Compared with other forms of treat-

Table 2. Common antidepressants used to treat depression in women[21]

Generic name	Starting dosage (mg/day)[a]	Usual dosage (mg/day)	Common side effects	Key drug interactions
Tricyclics and tetracyclics				
Tertiary amine tricyclics				
Amitriptyline	25-50	100-300	Dry mouth, sedation or drowsiness, blurred vision, rapid heart rate, constipation, difficulty urinating, confusion, nausea, increased appetite, weight gain, tremor, dizziness	May increase the effects of epinephrine, norepinephrine, and dopamine, resulting in cardiac side effects Cardiotoxicity may occur with concomitant use of antiarrhythmics or certain macrolide antibiotics.
Clomipramine	25	100-250		
Doxepin	25-50	100-300		
Imipramine	25-50	100-300		
Trimipramine	25-50	100-300		
Secondary amine tricyclics				
Desipramine[b]	25-50	100-300		
Nortriptyline[b]	25	50-200		
Protriptyline	10	15-60		
Tetracyclics				
Amoxapine	50	100-400		
Maprotiline	50	100-225		
Selective serotonin reuptake inhibitors[b]				
Citalopram	20	20-60	Nausea, decreased appetite, weight loss or gain, excessive sweating, insomnia, jitteriness, dizziness, increased appetite, dry mouth, changes in sex drive or ability	Concurrent use with medications that increase serotonin levels (e.g., MAOIs, triptans, St. John's wort) can cause serotonin syndrome. Concurrent use with drugs metabolized by the CYP450-2D6 pathway can result in increased serum concentrations of these agents.
Fluoxetine	20	20-60		
Fluvoxamine	50	50-300		
Paroxetine	20	20-60		
Sertraline	50	50-200		
Escitalopram	10	5-20		
Dopamine-norepinephrine reuptake inhibitors				
Bupropion[b]	150	300	Agitation, insomnia, weight loss, constipation, tremors, seizures	Increased risk for seizures with use of OTC stimulants and anorectics
Bupropion, sustained release[b]	150	300		
Serotonin-norepinephrine reuptake inhibitors				
Venlafaxine[b]	37.5	75-225	Abdominal pain and cramping, anorexia, anxiety, blurred vision, chills, constipation or diarrhea, drowsiness, headaches, insomnia Duloxetine can cause nausea, dry mouth, constipation, loss of appetite, fatigue, drowsiness, dizziness, increased sweating, blurred vision, and rash.	Avoid with use of MAOIs. Concomitant use of potent CYP1A2 inhibitors (e.g., fluvoxamine, cimetidine, quinolone antimicrobials such as ciprofloxacin) should be avoided.
Venlafaxine, extended release[b]	37.5	75-225		
Desvenlafaxine	50	50		
Duloxetine	20	20-60		
Serotonin modulators				
Nefazodone	50	150-300	Drowsiness, dizziness, fatigue, confusion, blurred vision, nasal congestion, dry mouth, constipation, nausea, vomiting, anorexia, urinary retention, priapism	Co-administration of antihypertensives may require decreasing the dosage of antihypertensive.
Trazodone	50	75-300		

Table 2. Common antidepressants used to treat depression in women[21] (continued)

Generic name	Starting dosage (mg/day)[a]	Usual dosage (mg/day)	Common side effects	Key drug interactions
Norepinephrine-serotonin modulator				
Mirtazapine	15	15-45	Abnormal dreams, somnolence, dizziness, constipation, increased appetite, weight gain, increased non-fasting cholesterol and triglyceride levels	Concomitant use of an MAOI may cause serotonin syndrome.
Monoamine oxidase inhibitors				
Phenelzine	15	60-90	Dietary interactions, headache, insomnia or sleep problems, blood pressure changes, drowsiness, nausea, dry mouth, constipation, dizziness, fluid retention, tremors, change in sexual ability, weakness, blurred vision, urinary problems	Avoid intake of substances high in tyramine (e.g., cheese, chocolate, beer, wine).
Isocarboxazid	20	20-60		
Selegiline	6	6-12		

[a]Lower starting dosages are recommended for elderly patients and for patients with panic disorder, significant anxiety or hepatic disease, and general co-morbidity.
[b]These medications may be optimal in terms of tolerability, safety, and quantity of clinical trial data.
CYP, cytochrome P; MAOI, monoamine oxidase inhibitor; OTC, over-the-counter.

ment for depression, ECT has the highest response rate.[25] In addition, ECT may help patients who are at extreme risk for suicide, have debilitating psychomotor agitation or retardation, or have severe physical debilitation. ECT may be a treatment of choice when an emergent response to treatment is needed (e.g., in patients who are refusing nutrition).[25] ECT is an option for pregnant women who are severely depressed.[26]

Transcranial magnetic stimulation—TMS therapy, a brain intervention that modulates activity in discrete cortical regions and associated neural circuits by noninvasively inducing intracerebral currents, has shown promise in patients with MDD or treatment-resistant MDD. Use of TMS to the left prefrontal area of the brain produced significant antidepressant effects in a study by George et al.[27] Meta-analysis has shown that TMS therapy may be helpful for treatment-resistant MDD.[28]

Alternative therapies—Several alternative therapies have shown benefit in managing depressive symptoms. *Hypericum perforatum*, also known as St. John's wort or goat weed, is derived from a plant that has some antidepressant properties.[29,30] This product has been widely used in other countries; some studies have shown its benefit in mild depression.[30] Use of St. John's wort is not regulated by the FDA, and dose comparisons are difficult. Bright light therapy, omega fatty acids, exercise, folate, and acupuncture are other alternative therapies used typically as adjuncts with varying effectiveness.[29]

Pet ownership and gentle yoga have both been shown to facilitate a sense of social connectedness and improve a sense of well-being in women with depression.[31,32] Krause-Parello[31] reported that pet ownership is beneficial in reducing social isolation and improving overall quality of life in the geriatric population. Kinser et al[32] found that for the many women with MDD who suffer from isolation, rumination, and stress, the practice of gentle yoga provides a safe environment that supports mental wellness.

Special management considerations

Although most studies do not show a significant association between depression and race or ethnicity, many studies reveal that depression is linked to psychosocial factors associated with socioeconomic status. Taking this link into consideration, His-

panic and African American women of lower socioeconomic status may be at higher risk for depression, and they may be less likely to seek treatment for it.[4] Data have also shown that persons who are able to follow their traditional cultural beliefs and maintain their cultural support systems tend to have lower rates of depression.[4,33]

Lesbian participants in the Women's Health Initiative were noted to have quality of life and emotional well-being scores similar to those of heterosexual women, but these women had to deal with social stressors such as prejudice, stigmatization, and antigay violence.[34] These stressors may predispose them to mental distress, depression, suicidal ideation, and self-harm behaviors. Lesbian women who have a good social support, those involved in a stable and satisfying relationship, and those more accepting of their sexual orientation have a lower incidence of depression.[35]

Depression and life stages

Women may be at higher risk for depression during puberty, before the onset of each menstrual period, during the postpartum period, and during perimenopause.[1] Studies have shown that some women's brains are unable to quickly respond to the hormonal changes occurring during these life stages and time periods, thereby predisposing them to depression.[36]

Premenstrual dysphoric disorder—PMDD is a severe form of premenstrual syndrome that occurs in 2%-9% of premenopausal women.[1] Women report social and work-related problems during the luteal phase of the menstrual cycle.[1] The *DSM-5* places PMDD under the Section II of Depressive Disorders.[9] Onset is often in the teens to late 20s, with symptoms peaking in the 30s and early 40s. A family history and past episodes of depression are common. PMDD places women at higher risk for a major depressive episode. Medications with FDA approval for treatment of PMDD include the selective serotonin reuptake inhibitors (SSRIs) fluoxetine, paroxetine, and sertraline and drospirenone-containing combination hormonal contraceptives. The most consistent success rates with SSRIs have been demonstrated with a continuous dosing schedule throughout the menstrual cycle rather than an intermittent schedule from ovulation to the onset of menstruation each month. The efficacy of drospirenone-containing contraceptives in the treatment of PMDD is attributed to the combination of ovulation suppression and the blocking of androgenic hormone properties linked to increased irritability.

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Gonadotropin-releasing hormone (GnRH) agonists may be considered, but these agents have major menopause-like side effects, and long-term therapy may predispose to bone loss.[37] Therapy with a GnRH agonist should be limited to 4-6 months unless combined with combination hormonal therapy.[37]

Perinatal depression—More common than previously thought, perinatal depression affects approximately 14% of pregnant women.[3] Factors that can increase depression risk during pregnancy include a personal or family history of depression, younger age, and having a coexisting health problem such as gestational diabetes, thyroid dysfunction, or anemia. Other problems that can increase perinatal depression risk are marital discord, limited social support, multiple children, stressful life events, and unwanted pregnancy.[3] Treatment for perinatal depression is chosen judiciously because certain medications can affect the developing fetus. However, if left untreated, perinatal depression can have deleterious effects on both mother and child, including maternal suicide, fetal abuse, and infanticide.[9,36,38]

Use of the SSRI paroxetine during pregnancy has been associated with a rare but serious disorder called persistent pulmonary hypertension of the newborn (PPHN).[39] PPHN occurs most commonly when SSRIs are taken during the last half of pregnancy. Some SSRIs, when taken in the first trimester, have been associated with septal heart defects in the fetus.[39] Use of the SSRIs paroxetine and sertraline is linked to risks for fetal heart defects, anencephaly, cra-

niosynostosis, and omphalocele. Tricyclic antidepressants (TCAs) are considered safe for use in pregnancy. Earlier studies showed a possible increase in limb malformation associated with TCA use, but later studies failed to confirm this association.[39] Use of monoamine oxidase inhibitors is best avoided during pregnancy. Use of these agents can significantly raise blood pressure.[39,40] Few data are available on the use of bupropion in pregnancy; this agent should be used with caution.[39]

The American Psychiatric Association and the American College of Obstetricians and Gynecologists [now the American Congress of Obstetricians and Gynecologists] issued joint recommendations on the treatment of pregnant women with depression.[41] Women on medication for depression when they become pregnant may consider continuation of the same medication, change to a different medication, or consider tapering and discontinuing the medication after a discussion with their healthcare provider of benefits and risks. Women with a history of recurrent depression are at high risk for relapse if medication is discontinued. Pregnant women with untreated depression should be evaluated and the risks and benefits of starting medication discussed. Psychotherapy is an option during pregnancy. Any antidepressant used during pregnancy may need to be titrated to compensate for the decreased concentration levels related to increased maternal blood volume.[39]

Postpartum depression disorders—Postpartum depression disorders include a spectrum of illnesses ranging from postpartum blues to postpartum depression (PPD) to postpartum psychosis. Postpartum blues is quite common, occurring in 13%-17% of women.[1,3] This illness is usually mild and self-limited, with a short duration of symptoms such as mood liability, irritability, depression, tearfulness, anxiety, fatigue, and sleep disturbances. Onset of PPD, more severe and disabling than postpartum blues, occurs most often 6-12 weeks post-delivery. An estimated 9%-16% of new mothers experience PPD.[42] Among women who have already experienced PPD following a previous pregnancy, some prevalence estimates increase to 41%.[42]

> Screening for PPD at specific times after delivery—6 hours, 6 days, 6 weeks, and 6 months afterward—may yield the best outcomes for mother and baby.

The most consistent predictors of PPD are a prior history of MDD and lack of a social network. Screening for PPD at specific times after delivery—6 hours, 6 days, 6 weeks, and 6 months afterward—may yield the best outcomes for mother and baby. Contact with the new mother at these crucial times can allow for recognition and assessment of PPD and provision of treatment and follow-up care.[9]

Management of PPD includes both pharmacotherapy and psychotherapy. With regard to lactating women, studies have shown that although antidepressants may be excreted in breast milk, no serious adverse effects have been noted in the infants.[3] Among the newer non-TCA antidepressants, the SSRIs sertraline and paroxetine are considered first-line agents for breastfeeding mothers with depression.[43]

Postpartum psychosis is rare, affecting 0.1%-0.2% of women after childbirth. Women may display depressed or elevated mood, disorganized behavior, mood liability, delusions, and hallucinations. Postpartum psychosis is considered a psychiatric emergency and often requires hospitalization.[44]

Perimenopause—Most women make the transition to menopause without experiencing depression. Women who are more vulnerable are those with a prior history of PPD, premenstrual syndrome, and/or depressive episodes.[1,4,9] Depressive symptoms during perimenopause may be related to vasomotor changes or other physical symptoms, rather than the menopausal state itself.[36] Women experiencing severe hot flashes and sleep deprivation are noted to have higher rates of depression. For perimenopausal women who need contraception, hormonal methods provide significant non-contraceptive benefits, including control of vasomotor symptoms that may affect mood and sense of well-being. Postmenopausal hormonal

The authors' useful tips for recognizing and treating depression in women

- Ask the question. If you have any concern that your patient has depression, ask. Use screening tools to assess depression severity.
- If a patient is depressed, assess her safety. Ask her directly, "Do you feel safe? Do you have any thoughts of doing harm to yourself or others?" Depending on her answers, call 9-1-1 (e.g., if the woman appears to be in acute danger of hurting herself or someone else; laws protect providers in terms of facilitating an emergency psychiatric admission against an individual's will) or refer her to the emergency department for evaluation and possible admission if you are certain that she will follow through on your recommendation.
- Make certain that your patient has a safety plan in place while you are coordinating psychiatric care. This plan should include the name of the person she will call if she is feeling hopeless or helpless.
- If you are going to assume the care of your depressed patient, have a variety of medication/treatment options that you are comfortable prescribing. Keep in mind that you may need to start a medication at a lower-than-standard dosage in women.
- Be consistent in arranging appropriate follow-up, no longer than 2 weeks between visits initially. Continually reassess your patient's response to treatment.

therapy for management of vasomotor symptoms may also be considered. Use of an SSRI or a serotonin and norepinephrine reuptake inhibitor, with or without hormone therapy, is effective in treating depression during this stage of life.[3,6,36]

Conclusion

Depression in women is a major public health problem. Presence of this disorder affects not only the patients themselves, but also their family members and their colleagues at work who depend on them. Because depression is treatable, and because early recognition of symptoms tends to result in better outcomes, NPs must be familiar with various screening tools, be able to diagnose depression in its early stages, and know how to prescribe treatment and monitor its effects (*Box*).

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References

1. Accortt MA, Freeman MP, Allen JJ. Women and major depressive disorder: clinical perspectives on causal pathways. *J Womens Health*. 2008;17(10):1583-1590.

2. Kupfer DJ, Frank E, Phillips ML. Major depressive disorder: new clinical, neurobiological, and treatment perspectives. *Lancet*. 2012;379(9820):1045-1055.

3. Alexander JL. Quest for timely detection and treatment of women with depression. *J Manag Care Pharm*. 2007;13(9 suppl A):S3-S11.

4. Keita GP. Psychosocial and cultural contributions to depression in women: considerations for women midlife and beyond. *J Manag Care Pharm*. 2007;13(9 suppl A):S12-S15.

5. Greenberg PE, Kessler RC, Birnbaum HG, et al. The economic burden of depression in the United States: how did it change between 1990 and 2000? *J Clin Psychiatry*. 2003;64(12):1465-1475.

6. Zender R, Olschansky E. Women's mental health: depression and anxiety. *Nurs Clin North Am*. 2009;44(3):355-364.

7. Beck AT. The evolution of the cognitive model of depression and its neurobiological correlates. *Am J Psychiatry*. 2008;165(8):969-977.

8. Stegenga BT, King M, Grobbee DE, et al. Differential impact of risk factors for women and men on the risk of major depressive disorder. *Ann Epidemiol*. 2012;22(6):388-396.

9. American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*. Arlington, VA: American Psychiatric Association; 2013.

10. Toney SD. Identifying and managing depression in women. *J Manag Care Pharm*. 2007;13(9 suppl A):S16-S22.

11. National Institute of Mental Health. Suicide in the U.S.: Statistics and Prevention. www.nimh.nih.gov/health/publications/suicide-in-the-us-statistics-and-prevention/index.shtml

12. Clayton A, Guico-Pabia C. Recognition of depression among women presenting with menopausal symptoms. *Menopause*. 2008;15(4):758-767.

13. Golinkoff M. Managed care best practices: the road from diagnosis to recovery: access to appropriate care. *J Manag Care Pharm*. 2007;13(9 suppl A):S23-S27.

14. Beck AT, Ward CH, Mendelson M, et al. An inventory for measuring depression. *Arch Gen Psychiatry*. 1961;4:561-571.

15. Zung Self-Rating Depression Scale. http://library.umassmed.edu/ementalhealth/clinical/zung_depression.pdf

16. The Hamilton Rating Scale for Depression. http://healthnet.umassmed.edu/mhealth/HAMD.pdf

17. The World Health Organization World Mental Health Composite International Diagnostic Interview (WHO WMH-CIDI). 2004. http://www.hcp

.med.harvard.edu/wmhcidi/

18. Psychological General Well-Being Index. (PGWBI). http://www.opapc.com/uploads/documents/PGWBI.pdf

19. Arrol B, Goodyear-Smith F, Crengle S, et al. Validation of PHQ-2 and PHQ-9 to screen for major depression in the primary care population. *Ann Fam Med*. 2010;8(4):348-353.

20. Quick Inventory of Depressive Symptomatology – Self Report. http://counsellingresource.com/quizzes/qids-depression/index.html

21. Jackson CW, Cates ME, Feldman JM. Major depressive disorder. In: Chisholm-Burns M, Schwinghammer T, Wells B, et al, eds. *Pharmacotherapy Principles and Practice*. 2nd ed. McGraw-Hill Companies, Inc.; 2010:653-668.

22. Pitychoutis PM, Zisaki A, Dalla C, Papdopoulou-Daifoti. Pharmacogenetic insights into depression and antidepressant response: does sex matter? *Curr Pharm Des*. 2010;16(20):2214-2223.

23. Lyoo IK, Yoon S, Kim T, et al. A randomized, double-blind placebo-controlled trial of oral creatine monohydrate augmentation for enhanced response to a selective serotonin reuptake inhibitor in women with major depressive disorder. *Am J Psychiatry*. 2012;169(9):937-945.

24. Papakostas GI, Mischoulon D, Shyu I, et al. S-adenosyl methionine (SAMe) augmentation of serotonin reuptake inhibitors for antidepressant nonresponders with major depressive disorder: a double-blind, randomized clinical trial. *Am J Psychiatry*. 2010; 167(8):942-948.

25. Lisanby SH. Electroconvulsive therapy for depression. *N Engl J Med*. 2007;357(19):1939-1945.

26. Anderson EL, Reti IM. ECT in pregnancy: a review of the literature from 1941 to 2007. *Psychosom Med*. 2009;71(2):235-242.

27. George MS, Lisanby SH, Avery D, et al. Daily left prefrontal transcranial magnetic stimulation therapy for major depressive disorder. *Arch Gen Psychiatry*.,2010;67(5):507-516.

28. Dell'Osso B, Camuri G, Castellano F, et al. Meta-review of metanalytic studies with repetitive transcranial magnetic stimulation (rTMS) for the treatment of major depression. *Clin Pract Epidemiol Ment Health*. 2011;7:166-177.

29. Geller SE, Studee L. Botanical and dietary supplements for mood and anxiety in menopausal women. *Menopause*. 2007;14(3):541-549.

30. Deligiannidis KM, Freeman MP. Complementary and alternative medicine for the treatment of depressive disorders in women. *Psychiatr Clin North Am*. 2010;33(2):441-463.

31. Krause-Parello CA. Pet ownership and older women: the relationships among loneliness, pet attachment, support, human social support, and depressed mood. *Geriatr Nurs*. 2012; 33(3):194-203.

32. Kinser PA, Bourguignon C, Whaley D, et al Feasibility, acceptability, and effects of gentle Hatha yoga for women with major depression: findings from a randomized controlled mixed-methods study. *Arch Psychiatry Nurs*. 2013;27(3):137-147.

33. Ward EC. Examining differential treatment effects for depression in racial and ethnic minority women: a qualitative systematic review. *J Natl Med Assoc*. 2007;99(3):265-274.

34. Valanis BG, Bowen DJ, Bassford T, et al. Sexual orientation and health: comparisons in the women's health initiative sample. *Arch Fam Med*. 2000;9(9):843-853.

35. Mravcak S. Primary care of lesbians and bisexual women. *Am Fam Physician*. 2006;74(2):279-288.

36. Deecher D, Andree TH, Sloan D, Schecheter LE. From menarche to menopause: exploring the underlying biology of depression in women experiencing hormonal changes. *Psychoneuroendocrinology*. 2008;33(1):3-17.

37. Kelderhouse K, Taylor JS. A review of treatment and management modalities for premenstrual dysphoric disorder. *Nurs Womens Health*. 2013;17(4):294-305.

38. Legato MJ. The skewed sex distribution in affective disorders—a diagnostic, social, or biological problem? *Prog Brain Res*. 2010;186:159-166.

39. Hackley B. Antidepressant medication use in pregnancy. *J Midwifery Womens Health*. 2010;55(2):90-100.

40. Harding JH, Timko JV. The use of psychotropic medications during pregnancy and lactation. *Global Library of Women's Medicine*. 2008. www.glowm.com/?p=glowm.cml/section_view&articleid=415

41. Yonkers KA, Wisner KL, Stewart DE, et al. Depression During Pregnancy: Treatment Recommendations. A Joint Report From APA and ACOG. August 21, 2009. www.acog.org/About_ACOG/News_Room/News_Releases/2009/Depression_During_Pregnancy

42. American Psychological Association website. Postpartum Depression. 2014. http://www.apa.org/pi/women/programs/depression/postpartum.aspx

43. Berle JO, Spigset O. Antidepressant use during breastfeeding. *Curr Womens Health Rev*. 2011;7(1):28-34.

44. Spinelli M. Postpartum psychosis: detection of risk and management. *Am J Psychiatry*. 2009;166(4):405-408.

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A. https://npwhcourses.globalclassroom.us/stratus/course/view.php?id=62

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