Depression in older adults is a problem often encountered in primary care. While depression is evident in all populations in the primary care setting, assessment and care are more complicated in the older adult due to factors such as comorbidities, clinical presentation, adverse drug effects and drug interactions, and psychosocial factors. Due to these complications, it is essential to incorporate both conventional and alternative methods in assessment and treatment. This article aims to define depression in older adults, present the epidemiology, discuss clinical presentation and screening, and offer an integrative approach to intervention, including both pharmacological and nonpharmacological methods.

Providing holistic and integrative care to older adults diagnosed with depression in the primary care setting is essential to promote healing and recovery. This article aims to provide insight for nurses, nurse practitioners, and other providers regarding the holistic and integrative care of depression in older adults in the primary care setting.

Keywords: older adults; nurses (advanced practice); psychosocial/mental health; integrative
Definition

The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., DSM-5) lists eight types of depressive disorders total (APA, 2013). Of these, major depressive disorder (MDD) and persistent depressive disorder/dysthymia are most common in the older adult (Halverson et al., 2013). Despite this, knowledge of other depressive disorders such as substance-/medication-induced and depression due to another medical condition is important for diagnosis (APA, 2013; Halverson et al., 2013). Common in all of these disorders are feelings of sadness and/or emptiness with a labile mood (APA, 2013). These symptoms often have somatic manifestations and changes in cognition, and patients may be unable to perform everyday activities (APA, 2013).

MDD is the most common of all the depressive disorders (APA, 2013). While this is true, many older adults are infrequently diagnosed with MDD (Halverson et al., 2013). This could be due to an atypical presentation of symptoms, lower utilization of health services, and stigma associated with mental health (Byers, Yaffe, Covinsky, Friedman, & Bruce, 2010; Halverson et al., 2013; Manetti et al., 2014).

Dysthymic disorder, a chronic form of MDD, is seen more commonly in the older adult (Halverson et al., 2013; Rubio et al., 2011). It is associated with symptoms of MDD but lasts for more than 2 years (APA, 2013). This form of MDD tends to be related to those who are socioeconomically and educationally disadvantaged (Rubio et al., 2011).

Epidemiology

Interestingly, the prevalence of MDD in older adults tends to be lower than that of younger adults and in fact declines with age (Byers et al., 2010; Manetti et al., 2014). In the primary care setting, the prevalence of late-life depressive syndromes is about 6% to 9% (Alexopoulos, 2005). Subthreshold depression, not listed in the DSM-5, is a depressive disorder in which patients do not quite meet the criteria for MDD (Meeks, Vahia, Lavretsky, Kulkarni, & Jeste, 2011). Older adults are 2 to 3 times more likely to develop subthreshold depression than MDD (Meeks et al., 2011). While this is a “milder” form of depression, it still is associated with cognitive changes, poor quality of life, disability, and increased risk for suicidal ideation (Meek et al., 2011). Additionally, patients older than 65 years report a similar number of lifetime major depressive episodes as their younger counterparts, yet use mental health resources at a lower rate (Manetti et al., 2014). Prognosis of depression is poor for those individuals 55 years old or older (Licht-Strunk et al., 2009). In fact, major depressive episodes in this population tend to last an average of 19.3 months and only 27% of those with subthreshold depression achieve remission after 1 year (Licht-Strunk et al., 2009; Meeks et al., 2011).

Characteristically, older adults with MDD are more likely to be female, widowed, or divorced; be of African American, Hispanic, or Asian descent; have comorbidities such as cardiovascular disease, arthritis, or gastrointestinal disease, or lifetime history of dysthymia; live in rural areas; have public assistance and low self-esteem; and have poor health overall and comorbidities (Manetti et al., 2014; Rubio et al., 2011).

Pathophysiology

Although the pathophysiology of MDD is still not completely clear, many studies and theories point to neurotransmitter availability and receptor activity (Halverson et al., 2013). These neurotransmitters may include serotonin, norepinephrine, dopamine, glutamate, brain-derived neurotrophic factor, and cortisol (Fournier, 2013; Halverson et al., 2013). In fact, many of the drug classes work to increase the amount of brain serotonin, norepinephrine, and/or dopamine (Halverson et al., 2013). They accomplish this by inhibiting their breakdown, blocking reuptake, or modulating receptors (Halverson et al., 2013). Cortisol, the stress hormone, tends to be increased in people with depression (Fournier, 2013). This could be explained by a malfunctioning stress response that mediates levels of cortisol. Those with MDD have a slower recovery from stress stimuli than the average person (Fournier, 2013). Some studies also have found an increase in blood flow in the amygdala and abnormal communication in the limbic-prefrontal cortex, both emotional systems of the brain (Fournier, 2013). Last, an exploration into the genetics of MDD led to a possible gene variance of the serotonin reuptake transporter (Forehand, 2009). In this case, the amygdala tends to be hyperactive when exposed to stress and...
emotional stimuli in individuals with genetic variant (Forehand, 2009).

In older adults, these changes are complicated by physiological changes associated with age and pathological changes occurring with certain diseases (Halverson et al., 2013). As the brain ages, the cortex becomes hypometabolic and the limbic system becomes hypermetabolic in states of depression (Alexopoulos, 2005). Certain vascular diseases and comorbidities, such as cerebral vascular accident, are also associated with depression in the aged brain (Alexopoulos, 2005).

Clinical Presentation

Adults with depression tend to present with depressed mood and hopelessness for most of the day, although they may not identify this as their chief complaint (APA, 2013; Fournier, 2013). Patients may also present with loss of interest in activities, social withdrawal, change in appetite, insomnia, fatigue, guilt, worthlessness, focus on personal deficits, impaired concentration, difficulty with decision making, mild memory impairment, and recurrent thoughts of death (APA, 2013; Fournier, 2013). These symptoms are apparent almost every day in the depressed person. According to the DSM-5, if at least five of these symptoms are present within a 2-week time period and depressed mood or loss of pleasure is at least one of these symptoms, a diagnosis of MDD is warranted (APA, 2013).

Older adults, specifically, tend to present with more somatic and atypical symptoms related to depression (Fournier, 2013; Halverson et al., 2013). It is important to thoroughly assess memory impairment symptoms as they may be caused by other etiologies. While late-onset depressive episodes are associated with increased risk of dementia and Alzheimer’s disease in patients older than 70 years (Vilalta-Franch et al., 2013), other causes of cognitive impairment should be ruled out. Additionally, because of losses experienced during aging, it is important to differentiate grief from a major depressive episode in this population (APA, 2013). Grief tends to fluctuate in nature and is not associated with feelings of worthlessness (APA, 2013).

The USPSTF recommends screening adults for depression in primary care but only if depression support is available where the screening is being conducted (O’Connor et al., 2009). Depression support is defined as availability of staff to follow up with the patient, psycho-educational classes, case management, behavioral counseling referral, and medication management (O’Connor et al., 2009). Time of follow-up in the studies evaluated ranged anywhere from 10 weeks to 24 months (O’Connor et al., 2009). While the degree of necessary staff support is not completely clear, it is evident that screening older adult patients for depression in the primary care setting should include support and follow-up as well.

While many tools are available for screening depression in older adults, the Patient Health Questionnaire 2 (PHQ-2) and the Geriatric Depression Scale (GDS) 5/15 are very effective and efficient tools that have demonstrated validity in the literature (Li, Friedman, Conwell, & Fiscella, 2007; Weeks, McGann, Michaels, & Penninx, 2003). The PHQ-2 demonstrated 100% sensitivity and 77% specificity for major depression in adults older than 65 years (Li et al., 2007). The PHQ-2 consists of two questions and has been found to be as effective as the PHQ-9 (Li et al., 2007). The PHQ-2 questions (1) if the patient has felt hopeless, depressed, or down in the past 2 weeks and (2) if the patient has had little interest in doing things, therefore assessing the anhedonia quality of depression. The patient recalls if the frequency of these symptoms over the past 2 weeks has been for several days, more than half the days, nearly every day, or not at all and is then scored within a range of 0 to 6, 3 points per question (Kroenke, Spitzer, Williams, & Lowe, 2010). A score of 3 indicates a positive screen (Kroenke et al., 2010). However, the PHQ-2 is not diagnostic, and patients who score positive should be further screened with the PHQ-9 in addition to provider assessment (Li et al., 2007; Kroenke et al., 2010). The PHQ-2 and PHQ-9 are accessible online for free at http://www.phqscreeners.com/.

The five-item GDS has demonstrated 96.7% sensitivity and 73.8% specificity in cognitively intact older adults (Weeks et al., 2003). As with the PHQ-2, the GDS-5 has been shown to be as effective as the longer version, the GDS-15 (Weeks et al., 2003). If 2 of the 5 questions are positive, then the provider should consider possible depression and ask the remaining 10 questions (Weeks et al., 2003). This is why the GDS is sometimes labeled as GDS 5/15. Weeks et al. (2003) hoped that by developing a simple
screening tool, providers would have the time to screen older adults for depression with each visit. Versions of the GDS, including samples in other languages, are provided by the Stanford website at http://web.stanford.edu/~yesavage/GDS.html.

During a primary care visit, it is also important for the health care provider to assess stressors, sleep patterns, nutrition, and physical activity as these are associated with depression (Fournier, 2013). While the USPSTF makes no recommendations for suicide screening due to no evidence of improved outcomes (Gaynes et al., 2004), it is important for the provider to make an individual assessment of the patient’s risk for suicide (Fournier, 2013; Halverson et al., 2013).

Last, one must rule out other causes of depression to make a diagnosis (APA, 2013). These causes could include central nervous system disorders such as multiple sclerosis, cerebrovascular disease, or dementia; thyroid disease; drug-related conditions such as substance abuse and withdrawal; infectious disease such as mononucleosis; sleep disorders; deficiencies such as vitamin B-12 and electrolytes; and certain medications (APA, 2013; Halverson et al., 2013).

Diagnosis of depression is based largely on history and screening, and physical findings are limited (Halverson et al., 2013). However, if the provider is concerned about underlying etiologies of depression, physical assessment should be included related to these diseases. Halverson et al. (2013) suggest that a neurological and thyroid assessment may be warranted and that the provider should be vigilant in recognizing signs of infection. While some older adults with depression may appear normal, others may present with a disheveled state, flat affect, psychomotor abnormalities, changes in weight, or monotone speech.

The algorithm found in the appendix can aid the primary care provider or nurse in recognizing depression. The provider first recognizes symptoms of depression. When symptoms are recognized, the provider should determine whether that patient meets criteria for MDD based on the DSM-5 criteria. Simultaneously, the patient is screened using the PHQ-2 or GDS-5. If either of these tests is positive, the longer version should be completed. Most important, the patient should be assessed for suicidal ideation. Last, other causes of depression and/or depressive symptoms should be assessed before the primary care provider can move on to holistic intervention.

Pharmacological Interventions

Pharmaceutical Antidepressants

According to a Cochrane review of antidepressants for the depressed older adult, about two thirds of older adults with severe depression will respond to antidepressants (Wilson et al., 2009). There are a number of different classes of medications used in the treatment of depression including monoamine oxidase (MAO) inhibitors, tricyclic antidepressants (TCAs), selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs), and atypical antidepressants (Fournier, 2013; Wilson et al., 2009). The efficacy of these classes is generally equal, and therefore it is important to consider symptomology, side effect profile, comorbidities, and interactions when prescribing in the older adult population (Fournier, 2013). Wilson et al. (2009) found no significant differences in depression severity among drug classes. However, they learned that withdrawal rates were lowest in SSRI groups due to a lower side effect profile. The SSRIs and SNRIs tend to have fewer side effects, fewer drug interactions, and less opportunity for overdose and therefore tend to be prescribed often in older adults.

MAO inhibitors such as isocarboxazid, phenelzine, selegiline, and tranylcypromine block MAO, therefore inhibiting the breakdown of serotonin, epinephrine, phenylethylamine, and dopamine (Halverson et al., 2013). While this class of drugs is the oldest of the antidepressants, it is infrequently used due to risk for hypertensive crisis, need for low-tyramine diet, high drug interaction, and large side effect profile (APA, 2010).

TCAs such as amitriptyline and desipramine work by inhibiting the reuptake of norepinephrine and serotonin (Halverson et al., 2013). Because of their anticholinergic properties, these medications have side effects of weight gain, sedation, orthostasis, and more (APA, 2010). Studies show that TCAs are less well tolerated than placebo (Taylor et al., 2011). Of note, these medications have the benefit of lower cost (Halverson et al., 2013).

The SSRIs include, for example, citalopram, escitalopram, fluoxetine, paroxetine, and sertraline (Halverson et al., 2013). These medications work by selectively inhibiting reuptake of serotonin, thereby increasing its availability. This class has little effect on norepinephrine and dopamine. While side effects in this class include gastrointestinal upset, sexual
dysfunction, emotional blunting, cognitive dysfunction, and changes in energy level, the effects tend to not be as noticeable as the side effects in other classes (APA, 2010; Halverson et al., 2013; Wilson et al., 2009). Taylor et al. (2011) demonstrated that SSRIs are the only class of drug shown to enhance quality of life. Therefore, they are often used as first-line agents in uncomplicated depression (Halverson et al., 2013).

The SNRIs, including venlafaxine and duloxetine, are another newer class of antidepressants (Fournier, 2013). This class of drugs works by inhibiting not only serotonin but also norepinephrine (Halverson et al., 2013). According to Halverson et al. (2013), they are especially helpful in somatic symptoms of depression such as pain and fatigue and can be used as second-line treatment to SSRIs. They additionally support their use in the treatment of neuropathic pain and can therefore be considered for use in older adults with chronic neuropathic pain. Last, while safety and side effect profile is similar to that of SSRIs, it is important to consider venlafaxine’s potential for hypertension and hyponatremia, especially in the older adult population.

Atypical antidepressants such as bupropion, mirtazapine, and trazadone each have different mechanisms of action but have been shown to be effective in the treatment of depression (Halverson et al., 2013). Bupropion works by inhibiting dopamine reuptake and decreases norepinephrine activity. While headache and mild weight loss may accompany this medication, it has a benefit over SSRIs in that it does not cause sexual dysfunction. In a sexually active older adult, this side effect could be of great concern. In this patient, bupropion may be the best option in enhancing quality of life.

Mirtazapine works by blocking alpha-2 and serotonin receptors (Halverson et al., 2013). This medication could be considered in the older adult with poor appetite as it has the added effect of appetite stimulation and weight gain (Halverson et al., 2013). However, it must be noted that sedation can occur, and it should be taken before bed. Last, trazadone inhibits the reuptake of serotonin in addition to modulating its neurotransmission (Halverson et al., 2013). This medication has a side effect of sedation and is sometimes used before bed to additionally treat insomnia (APA, 2010; Halverson et al., 2013).

In older adults, it is important to start with the antidepressant at a low dose and titrate upward slowly (Wilson et al., 2009). Typically, 2 to 12 weeks at a therapeutic dose of the medication are required before clinical response is seen (Halverson et al., 2013). Additionally, treatment of depression in older adults is often complicated by comorbidities. A systematic review and meta-analysis conducted by Taylor et al. (2011) found both SSRIs and TCAs to be effective in achieving remission of depression. In this study, SSRIs were associated with better quality of life and lower cardiovascular risk and were therefore recommended as first choice. They also demonstrated that all classes of antidepressants were less tolerated than placebo. Therefore, it is extremely important to consider side effect profile, patient presentation, and comorbidities in the selection of antidepressant class in the older adult population.

### Alternative Pharmacological Treatments

Alternative pharmacological treatments such as St. John's wort extract and omega-3 have been investigated for use in depression. St. John’s wort extract (Hypericum perforatum L.), an over-the-counter supplement, has been shown to be as effective as other standard antidepressants and with fewer side effects (Linde, Berner, & Kriston, 2009). In fact, patients were less likely to drop out of studies due to adverse effects than patients on standard antidepressant therapy. However, the National Center for Complementary and Alternative Medicine (2013) reports other studies that have shown St. John's wort to be no more effective at treating depression than placebo. This is especially the case when it is used to treat moderate depression (National Center for Complementary and Alternative Medicine, 2013). St. John’s wort may have serious drug interactions with certain other medications (Linde et al., 2009). Therefore, it must be used with caution in those older adults taking other medications.

A randomized, double-blind trial of elderly women taking long-chain omega-3 polyunsaturated fatty acids showed a significant improvement in depressive symptoms and quality of life when compared to placebo (Rondanelli et al., 2010). The researchers reported a lack of serious side effects, and therefore this may be considered as an alternate treatment to standard pharmacotherapy. Again, drug interactions should be considered if prescribing this to patients with multiple medications.

Selection of pharmacological therapy needs to incorporate the patient’s goals of therapy, list of medications, comorbidities, and the patient’s perception of the side effects.
of most troubling symptoms. The previously listed pharmacological interventions allow room for the provider to treat both depression and peripheral neuropathy in the patient diagnosed with depression and diabetes, or depression and insomnia in the patient with serious sleep disturbances. This demonstrates the importance of a thorough history and establishment of patient goals for treatment.

Nonpharmacological Interventions

Pharmacological treatment of depression in older adults is complicated by side effects and comorbidities. Because of this, it is important to incorporate nonpharmacological methods in the treatment of depression in this population. Interventions such as cognitive–behavioral therapy (CBT), yoga, tai chi, meditation, religion and/or spirituality, Reiki, and more have shown promising effects on depression (Cruz et al., 2009; Gould, Coulson, & Howard, 2012; Krishnamurthy & Telles, 2007; Lavretsky et al., 2011; Richeson, Spross, Lutz, & Peng, 2010; Young & Baime, 2010). Unfortunately, many of these practices are not covered by health insurance, and availability may be limited. However, they show promising results and should be further evaluated for effectiveness to support their health insurance coverage.

CBT has been studied extensively in the literature. A meta-analysis and meta-regression of depression in older adults revealed that CBT is more effective than standard treatment (Gould et al., 2012). However, results at 6- and 9-month follow-up tended to be insignificant. Significant improvements in depressive symptoms were also not evident when compared with active controls.

A study by Krishnamurthy and Telles (2007) found that a structured yoga intervention had significant effects on depressive symptoms in older adults as measured by the GDS-15. The intervention included not only physical postures but also relaxation techniques, regulated breathing, devotional songs, and lectures, which are typical to an integrated approach to yoga. There are a number of different types of yoga. Many of these include practices such as breathing techniques, meditation, and spiritual study, which may be beneficial to the depressed older adult.

Lavretsky et al. (2011) researched a similar mind–body activity, tai chi chih (TCC), which is an abbreviated version of the full tai chi practice. They found that TCC enhances the effects of standard antidepressant therapy in older adults. Participants in this study were older adults already diagnosed with major depression. The group who combined escitalopram with TCC demonstrated improved depressive symptoms, quality of life, and memory, in addition to decreases in C-reactive protein when compared with a group receiving escitalopram and health education. There were no adverse effects reported in this study, indicating it to be a safe intervention for this population.

Some studies have found that religion and spirituality reduce depression. One study found that older adults diagnosed with late-life mild depression and mild to moderate hopelessness experienced significant reduction in depression and hopelessness severity with prayer and/or meditation (Cruz et al., 2009). Interestingly, this result was not correlated with public religious involvement, such as going to church, but only with private religious practices.

Another study found mindfulness-based stress reduction, similar to meditation, reduced the number of clinically significant depressed and anxious older adults by over 50% (Young & Baime, 2010). Again, no adverse events were reported with this intervention and should therefore be considered a safe complementary therapy in depressed older adults.

Reiki, a form of energy healing, has limited studies evaluating its effectiveness. However, one study demonstrated a significant improvement in GDS scores in older adults receiving weekly Reiki treatments when compared with controls (Richeson et al., 2010). Additionally, patients reported feelings of relaxation, improved physical symptoms, improved mood and well-being, curiosity and a desire to learn more, enhanced self-care, and sensory and cognitive responses to the intervention. Only one patient in this study experienced an adverse event, reportedly feeling depressed after one session. This resolved with future treatments. While Reiki is an important consideration in the alternative treatment of depression in older adults, a trained Reiki professional is necessary for this intervention. Therefore, in primary care, a referral would be necessary.

Many of these nonpharmacological interventions are simple, cost-effective, and with few side effects, yet the research and literature on them are lacking. More studies need to be conducted to determine the safety and efficacy of these interventions. It is important to incorporate those that have been studied thus far so that maximum efficacy of treatment of depression in older adults is achieved.
Again, the primary care provider can refer to the algorithm found in the appendix when making holistic treatment decisions in the management of depression. The algorithm guides the provider in treating underlying conditions and/or determining pharmacological and nonpharmacological interventions. This is based on the patient’s goals for treatment and wishes. Finally, the algorithm urges providers to make referrals as appropriate, develop a plan, and schedule follow-up.

**Conclusion**

Depression in the older adult seen in primary care is complex and challenging. Considering the whole person in assessment and management involves assessment of physical, psychosocial, and spiritual domains. It requires that the nurse, advanced practice nurse, or other provider take a thorough history, screen effectively, and be alert to signs and symptoms of depression. Additionally, it means offering and incorporating, as patient-desired, both pharmacological and nonpharmacological methods of treatment into the plan of care. Patient presentation, comorbidities, medications and their side effect profiles, as well as the patient’s wishes, all affect treatment decisions. Patient education and involvement in holistic treatment decisions are crucial. Offering both pharmacological and nonpharmacological interventions is an effective and holistic approach to promote healing within and recovery for depressed patients in the primary care setting.

**Appendix**

Management of Older Adult Depression in Integrative Primary Care

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![Algorithm Diagram](https://example.com/algorithm.png)

**Follow-up:** in 2 weeks to assess need for increase in antidepressant, side effect profile, and access to nonpharmacological interventions.
References
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