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Review Article

The role of complementary and alternative medicine for psychiatric disorders

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Abstract

Complementary and Alternative Medicine (CAM) has been used for a wide variety of disease states including psychiatric disorders. Herbal and nutritional supplements play an important role in CAM therapy and therefore their efficacy and safety should be explored, especially in psychiatric disorders. The Food and Drug Administration (FDA) does not regulate herbals and supplements and therefore caution must be used before making a decision. A careful overview of products with good scientific evidence will enable clinicians and patients to make a more informative decision. Even though herbals and nutritional supplements are usually safe, some may interact with a patient's current medication(s) and produce unwanted adverse event(s) that could potentially be fatal. It is not only important to determine if an herbal or supplement is effective, but also consider their possible interactions, overall safety and toxicity and other drawbacks.

Keywords: CAM, psychiatric disorders, herbal supplement, nutritional supplement

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Introduction

Even with the advancement of modern medicine to treat various mentalconditions, some people still search for complementary and alternative medicine (CAM) products that could potentially have the same benefit, but without the added unwanted side effects. Others explore CAM because they may feel that taking conventional medications (pharmacotherapy) for their condition is just not for them or maybe are dissatisfied with use thereof[1,2]. According to surveys, the use of CAM has increased from 36% in 2002 to 38.3% in 2007 in adults in the United States [3].

CAM is considered to comprise of modalities such as botanical medicines, lifestyle modifications, nutrition, acupuncture, faith-based counseling and many more. Depression and anxiety aretwomental conditions that commonly lead people in searchof CAM, especially nutritional and herbal supplementation [4,5]. However, only fewer than 40% of these people disclose to their physicians that they are using CAM to treat these conditions [4,5]. It is important to know that some herbals and nutritional supplements have been proven to have psychotropic effects that could alter a person's perception, emotion, or even behavior. Due to reported psychotropic effects, these supplements could potentially interfere with someone's current drug regimen, resulting in non-compliance and decreased quality of life. Examples would include a typical patient whose condition has been previously controlled on prescribed antidepressants and/or antipsychotics but now experiences unwanted and costly side effects as a result of using CAM.

Since herbal supplements contain hundreds of compounds, it is often unknown or impossible to know exactly how or what compound is responsible for affecting a person's brain chemistry. Furthermore, there are currently no FDA regulations for standardizing herbal supplements, which could lead to manufacturers producing these supplements not without impurities. Since there is no standardization, active ingredients from an herbal product can be different from one manufacturer to the next. In addition to active ingredients being different, they may also exhibit different mechanisms of action depending on the environment and methodology by

which the plant extract was prepared. The environment is critical because depending on the plant, its chemical makeup can change due to the location of where it was grown due to soil difference and the time of the year it was harvested. Methodology explains how an herb was extracted and prepared during the packaging process, as preparation of a plant extract may destroy certain compounds or introduce more impurities into the finished product [6].Many people only think about the herb itself but rarely they take into consideration these factors that can also affect the efficacy and safety. Therefore, careful research on manufacturer, how the herb was prepared, and where it was grown are important aspects to consider before making a decision on use of any CAM, especially if professional advice was not sought. Individuals seeking to find out more about the manufacturer and product quality should consider www.consumer.com as a great place to look at whether independent testing of nutritional products is currently available. Another great way to identify high quality products is by looking at the bottle for USP labeling. USP (U.S. Pharmacopeial Convention) is a nonprofit scientific organization that standardizes the strength, identity, quality, and purity of medicines, food ingredients, and dietary supplements manufactured [7]. By having the USP label, it means the product has been inspected for quality.

Some herbals and nutritional supplementations have been proven to help with depression, anxiety, and other central nervous system conditions while others are not. It is important to tease out these supplements versus the ones that are bogus based on the scientific data available. A careful overview of products with good scientific evidence will make it easier for consumers to find out which ones are efficacious as well as to determine the side effects and potential harms these supplements could pose. Below are some of the supplementations and/or herbalsthat are proven to be efficacious.

Folic Acid/Folate

Common Usage: Depression

Background: Folateis also known as vitamin B9 and can be obtained from foods such as leafy vegetables, organ meat, citrus, grains, and fortified breakfast cereal. Its role in the psychiatric world is that it gets converted to L-methylfolate, which then plays an important part of synthesizing key chemical messengers in the brain responsible for mood elevation such as serotonin and dopamine. Another possible reason why folate helps with depression is by lowering homocysteine levels in the blood [8,9]. Studies have shown that low folate correlates with depression and people with low folate are less likely to respond to an antidepressant if they were taking it.

Recommended Dosage: 500 μg daily [9]

Things to Consider: People who currently taking methotrexate for cancer treatment efficacy maybe reduced with folate supplementation. High dose of folate have also been reported to reduce effectiveness of seizure medications [8,10]

Omega-3 fatty acids (eicosapentaenoic acid, EPA, or higher ratio of EPA to DHA formulation only)[8]

Common Usage: Depression, bipolar disorder

Background: Omega-3 fatty acids include eicosapentanoic acid (EPA) and docosahexanoic acid (DHA). These can be found in wild variety of seafood including wild salmon, striped bass, mackerel, and sardines. It has been used and accepted widely in the medical community for reducing the risk of cardiovascular disease. In the psychiatric world, only EPA has been shown to be beneficial for depression [12]. Omega-3 fatty acids help reduce stress hormone in the brain that have been linked to depression and normalizes the membrane of the brain tissues [11]. It also helps the central nervous system by inhibiting mental stress in the brain. Various studies have shown fish oil is beneficial for bipolar and depression as monotherapy and also conjunction with antidepressant [10].

The American Psychiatric Association's treatment recommendations for the use of omega-3 fatty acids bears testament to this strategy. Joseph R. Hibbeln, MD, from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) tells Life Extension magazine, "The strongest evidence was found for managing major depressive symptoms, with the effect of omega-3s being at least as great, if not greater than, antidepressant medications." Regarding these powerful fatty acids, Dr. Hibbeln further notes, "… deficient intakes may increase risk for mental distress."

Recommended Dosage: 1g of EPA a day [8]

Things to Consider: Fish oil can increase bleeding risk if overused, and should be monitored or considered for those people that are at high risk for bleeding or are taking medications that increases their bleeding risk[8]. Most common side effects are gastrointestinal disturbances, nausea, and "fishy" breath. It is important to consider high-quality fish oil as lower-quality can have increased number of toxins and impurities.

S-Adenyosyl-L-methioine (SAMe)

Common usage: Depression

Background: SAMe is a molecule that is derived from L-methionine and is currently being sold in the United States as a supplement. SAMe is responsible for the synthesis of chemicals in the brain that help with mood elevation. Studies have shown its efficacy for mild and moderate depression and worked as well as conventional drug therapy in some trials [14-16].

Recommended Dosage: 200mg twice daily then up to 1800mg twice daily [17]

Things to consider:SAMe can cause nausea, headache, and anxiety[8]. It has not been studied in severe depression and it is unknown if it is efficacious in this patient group.

St. John's Worth (SJW)

Common Usage: Depression

Background: SJW is one the most studied botanicals for the treatment of depression. Its mood elevating effect could be attributed to hypericin and hypericin-like constituents' active compounds in the plant [8,21]. Its proposed mechanism is through acting like a weak antidepressant, increasing the availability of mood elevating chemical, serotonin, in the brain [8,21,22]. Since it acts as a weak antidepressant, side effects are usually not a major issue when taking this medication. Evidences have shown that *hypericum*, an active compound in the plant, is more efficacious than placebo in helping milder and moderate depression while safer and less side effects reported [8,18-20]. However, SJW has many drug interactions that warrant evaluation by or consultation witha pharmacist or physician before purchase. SJW reduces the level of certain drugs circulating in the body and renders them ineffective by increasing the body's ability to metabolize and clear out those drugs [24].

Recommended Dosage: 300 mg of standardized extract three times daily and up to 600mg three times daily for moderate-to-severe illness [23].

Things to Consider: Combining SJW and other antidepressants can excessively increase levels of serotonin and symptoms should be monitored for such as: headache, rapid heartbeat, fever, and in blood pressure, hallucination, and agitation [8]. Consider talking to a pharmacist or physician if you are taking any other medications to prevent drug interactions.

Gingko Biloba (Gingko)

Common Usage: Depression, Alzheimer's dementia

Background: Ginkgo is important for its antioxidant effect that prevents injury of the brain. They provide neuroprotection and normalize stress related chemicals in the brain [25]. Due to its ability to prevent chronic damage, it is best for those who are over the age of 50 for whom depressive episodes are due to cerebrovascular disease [8,17]. Recent study has shown that gingko did not help to prevent the progression of Alzheimer's and should not be used for this indication [8].

Recommended Dosage: 80mg three times daily (24% gingko flavonglycosides) [17]

Things to Consider: Side effects of gingko headache, gastrointestinal discomfort, dizziness [17]. Studies have shown that it does not help with Alzheimer's disease and should not be used [39].

Lavender:

Common usages: anxiety, depression

Background: lavender is known for its aromatic scent that is used for relaxation. One trial showed women who took daily baths with lavender oil experienced an elevated mood and reduced aggression [35]. Furthermore, clinical trials have shown that supplementation of lavender 80 mg per day have the same efficacy as benzodiazepine with a better safety profile [41-44]. A combination of lavender drop with imipramine, an antidepressant, produced additional benefit, thus requiring less amount of imipramine [28].

Recommended Dosage: 1 drop of lavandula tincture taken with imipramine or daily bath with lavender oil [28]

Things to Consider: lavender tincture has only been studied in conjunction with imipramine and therefore its efficacy by itself is currently unknown.

Zinc

Common Usage: Depression

Background: Zinc is a naturally occurring mineral that can be obtained through food. Many proteins in the brain require zinc in order to function properly[29]. As you would expect, deficiency in zinc would then cause abnormal protein functions. A recently published meta-analysis of 17 clinical studies concluded that the blood zinc concentration in depressed individuals is 1.85 umol/l lower (approximately 12.3 percent) than in a non-depressed control group. Additionally, there was evidence that incrementally lower zinc levels correlated positively with the severity of clinical depression [40]. Studies have shown that using zinc up to 25mg a day by itself has been shown to help with depression and normalizes the body's zinc level [30].

Recommended Dosage: 25 mg a day [31]

Things to Consider: Zinc reduces the absorption of copper and copper must be supplemented if zinc is to be used for more than 2 months [8].

L-Tryptophan and 5-hydroxytryptophan (5-HTP)

Common Usage: Depression

Background:

Tryptophan is one of the many amino acids the body requires and is also needed to make serotonin, a mood elevating chemical, in the brain. Research shows that lower level of tryptophan is associated with major depression and increase the risk of suicide attempts in depressed patients [32]. It is important to know that antidepressants work by increasing the availability of brain serotonin but do not help produce it. By taking 5-HTP, the body is able to convert it to serotonin and increase its production. It is recommended to supplement with 5-HTP rather than tryptophan because it is more effective in crossing the blood brain barrier into the central nervous system [17].

Table 1. Uses and Dosages of CAM for Common Mental Illnesses(adapted from Dinh, Oji and Noumedem, 2014, www.medpolicy.com)

Agents	Uses	Dosage	Comments
Folate	Depression	500 microgram Daily	Do not use with cancer treatments and seizure medications
Fish Oil (EPA)	Depression	1,000 mg EPA daily	Increase bleeding risk, check current medications that could increase bleeding
S-Adenyosyl-L-Methionine (SAMe)	Depression	200mg – 1800mg twice daily	Can cause nausea, headache, anxiety. Don't use in severe depression
St. John's Worth	Depression	300mg -600mg three times daily	Monitor for excessive serotonin symptoms
Gingko Biloba	Depression associated Alzheimer's	80mg there times daily	Does not help with Alzheimer's. Can cause dizziness, discomfort, and stomach upset
Lavender	Anxiety Depression	1 drop combined with antidepressant	Do not use alone for Depression
Zinc	Depression	25 mg daily	Must supplement copper if taken > 2 months
5-HTP L-Tryptophan	Depression	100-200mg 3x daily 500mg – 2,000mg daily	Monitor for Serotonin Symptoms
Kava	Anxiety	120 -240mg of kavalactones	May cause liver failure
Melatonin	Insomnia	0.5 – 5 mg, 20 minutes before bed	May cause nocturnal asthma

Recommended Dosage: 5HTP: 100mg three times daily up to 200mg three times daily. **Tryptophan:** 500mg daily up to 2000mg daily if needed [26]

Things to consider: 5-HTP in combination with antidepressant can cause high increase in serotonin level and side effects can be fatal. Must monitor for excessive level of serotonin by looking out for severe agitation, nausea, confusion, fast heartbeat, and increase in blood pressure.

Kava

Common Usage: Anxiety

Background: Through unknown mechanism, kava root extracts have been shown to have psychotropic properties that reduce anxiety. Four out of six studies showed that kava roots reduce anxiety in general anxiety patients with no other mood disorder [8]. The results were comparable to taking an antidepressant [3]. However, kava has been known to cause liver damage in certain people due to improper preparation using acetone or ethanol extractions and using other parts of the plants [8]. It is recommended to only use peeled roots and water solute extraction method to prevent liver damage [8].

Recommended Dosage: 120 mg a day up to maximum of 240mg of kavalactones after 3 weeks if patient is not responding [8]

Things to Consider: patients should avoid alcohol and benzodiazepine while using Kava kava. Liver function tests should also be done routinely [8]. No data has been published regarding the use of kava with antidepressants

and therefore caution should be taken when used in conjunction.

Melatonin

Common Usage: Insomnia, depression, seasonal affective disorder (SAD)

Background: melatonin is a naturally occurring chemical in the brain that is secreted by the pineal gland. It is responsible for regulating sleep cycle and helping with insomnia and jet lag. Melatonin only helps with depressed patients that are suffering from delayed sleep that are on antidepressant [33]. It is an excellent supplement or insomnia with no co-morbidities to maintain sleep, as well as SAD in winter months.

Recommended dosage: 0.5–5mg 20 minutes before bedtime [34]

Things to consider: high levels of melatonin have been associated with exacerbation of nocturnal asthma [35].

Other than using herbals and supplements, some people may choose faith-based counseling as a treatment for mental disorders. Since mental illnesses are usually multifactorial, it does not only affect our body physically but mentally as well. Spirituality and religion have been shown to have positive impact on coping behaviors, well-being, self-esteem, self-care, depression, anxiety, substance abuse, and medicating mind-body mechanism [37,38,45,46].It is important to note that many successful psychobehavioral therapies include spirituality as one of their components if not a major component in their programs. Due to many benefits, spirituality should be explored by going to a pastoral or some other form of spiritual care in patients with mental illness, especially if an individual expresses spirituality to be significant to them personally.

It is always important to discuss with your doctor, pharmacist and other health providers, especially one that is an experienced and licensed CAM professional, as combinations of herbals with conventional medicines may have devastating unwanted short or even long-term side effects. Keep in mind that CAM therapies are typically a complement to conventional medicines, not to be used as sole therapy without professional advice or if the conditions are serious or severe. In addition these therapies are not generally as safe and less expensive as postulated by many consumers. Caution should always be exercised, especially since CAM does not require FDA testing at this juncture. If used properly, they could decrease dosage of prescribed drug, but extra thought before using in combination with other medicines.

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