



ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.03
TPI 2021; 10(3): 628-631
© 2021 TPI
www.thepharmajournal.com

Received: 19-01-2021
Accepted: 21-02-2021

Ashaolu Victoria Oladimeji
Research Scholar, Department of
Chemistry, LIFE, Loyola
College, Chennai, Tamil Nadu,
India

MF Valan
Assistant Professor, Department
of Chemistry, LIFE, Loyola
College, Chennai, Tamil Nadu,
India

Natural phyto-based alternative medicine to combat depression amidst covid-19 pandemic

Ashaolu Victoria Oladimeji and MF Valan

DOI: <https://doi.org/10.22271/tpi.2021.v10.i3i.5840>

Abstract

The pandemic associated with the covid-19 virus has wrecked so many plans and investments, which has led millions all over the world into forced depression. The global state of the economy has diminished in these past few months which has resulted to loss of lives, properties, jobs, and most importantly the mental state of every individual. In view of these happenings, more attention is being focused on COVID-19 virus, and state of depression of humans begin to worsen, leading to deterioration of health and well-being of the general society. The side effects caused by synthetic drugs cannot be underestimated. In this study, we discuss and evaluate different plant species which could serve as alternative medicine for the treatment of depression. However, more scientific findings are recommended to support this postulate to provide a conclusive research on plant materials serving as a good traditional system of alternative medicine for the treatment of brain-related illness such as depression.

Keywords: covid-19 pandemic, alternative medicine, phytochemicals, depression

Introduction

Without controversy, the wide spread of the pandemic due to the covid-19 virus has literally forced millions of people all over the world into depression. Depression a state of mental illness, mostly mood disorder causes a persistent feeling of sadness and loss of interest. It affects thoughts, behaviors, motivation, feelings, and sense of well-being ^[1]. It may tend to a hallmark of sadness, difficulty in thinking and concentration and a significant increase or decrease in appetite and time spent sleeping. People experiencing depression may have feelings of dejection, hopelessness and, sometimes, suicidal thoughts. It can either be short term or long term. More than half of the worlds 'population is going through these but there is little or no attention focused to a healthy lifestyle to cure depression without having to go through medical examinations. This is a branch of science called Phytochemistry which employs the use of plant products and plant generated Phyto-compounds for the cure and treatment of human numerous diseases. Phyto-chemists strive to describe the structures of the large number of secondary metabolites found in plants, the functions of these compounds in human and plant biology, and the biosynthesis of these compounds. In view, of the state of the globe, this has led to exposure of alternative treatment of depression. Recent research has found plant nutrients, in particular, that make a significant contribution to enhancing healthful brain activity to fighting depression and mood disorders.

Effect of depression on public health

Depression is a major mental health cause of disease burden. Its consequences further lead to significant burden to public health, which include higher risk of dementia, premature mortality arising from physical disorders and maternal depression impacts on child growth and development ^[2]. Approximately 76% to 85% of depressed people in low and middle income countries are not receiving treatments ^[3] barriers to treatment include: inaccurate assessment, lack of trained health care providers, social stigma and lack of resources ^[4].

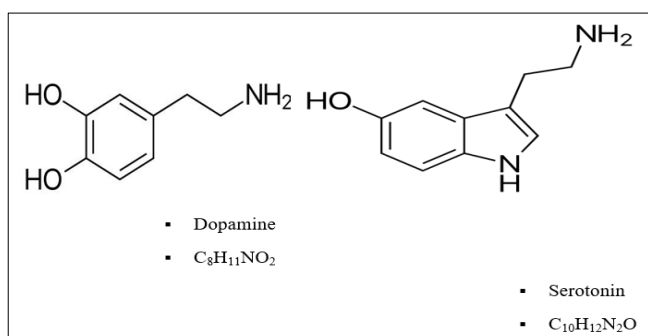
The World Health Organization constructed guidelines aiming to increase services for people with mental, neurological and substance use disorders known as The Mental Health Gap Action Programme (mhGAP) ^[4]. Depression is listed as one of conditions prioritized by the programme. Trials conducted show possibilities for the programme to be implemented on low-resource primary care settings dependent on primary care practitioners and lay health workers ^[5]. Examples of therapies by the mhGAP targeting depression are the Group Interpersonal

Corresponding Author:
Ashaolu Victoria Oladimeji
Research Scholar, Department of
Chemistry, LIFE, Loyola
College, Chennai, Tamil Nadu,
India

Therapy as group treatment for depression and Thinking Health which utilizes cognitive behavioural therapy to tackle perinatal depression [4]. Furthermore, effective screening in primary care is crucial for the access of treatments. The mhGAP programme adopted its approach of improving detection rates of depression by training general practitioners. However, there is still weak evidence supporting this training [2].

Chemistry of depression

Depression involves neurotransmitters from the brain that changes mood. There are many neurotransmitters that affects mood but the two main ones are Dopamine and Serotonin. Many medications can help this disease like Zoloft but there's no none cure.



Dopamine affects the neurons that give motivation and habit formation. It is an organic chemical that plays several different roles in the brain and body. When you are sad and down your Dopamine is very low which will cause the body to be depressed. Dopamine is mainly found in the brain but can also be found in the body. It is made to make a person feel better. The Chemical Component for Dopamine is $C_8H_{11}NO_2$

Serotonin is a mono-amine neurotransmitter. It is primarily found in the gastrointestinal tract, blood platelets, and the Central Nervous System. Serotonin is made to make a person feel better. The Chemical Component for Serotonin is $C_{10}H_{12}N_2O$.

Herbal Alternative Supplements to Depression

St. John's wort (*Hypericum perforatum*)

St. John's wort (*Hypericum perforatum*) is a shrubby herb with yellow flowers. It grows wild throughout Europe, parts of Asia, parts of Africa, and the western United States. Both the leaves and the flowers are used for medicinal purposes. For centuries, St. John's wort has been used to treat a variety of health conditions, including depression and mental health disorders. The herb also has anti-inflammatory properties, as well as antibacterial and antiviral properties. People have used it to treat infections and wounds on the skin. Today, St. John's wort is a popular alternative antidepressant medicine in Europe. The flowers on the St. John's wort plant are used to create the supplement, often in the form of teas, tablets, and capsules. Liquid extracts and tinctures are sometimes used as well. In case of mild to moderate depression, a standard dose of St. John's wort is between 20 to 1,800 milligrams from a tablet or capsule. The average dose is 300 milligrams two or three times per day. People with severe depression can take 900 to 1,800 milligrams of the herb daily, according to the Mayo Clinic. If the supplement eases your depression symptoms, you may decide to take less.

Saffron (*Crocus sativus*)

Saffron (*Crocus sativus*) is a rare spice made from the dried stigma of the *Crocus sativus* flower. Saffron has been used for centuries to strengthen digestion, smooth menstruation, improve mood, and increase relaxation. Today, it holds promise as a potential alternative treatment for depression. A 2013 study found that saffron supplements actually improve mood and reduce symptoms of major depressive disorder. The study also concluded that more research is needed before saffron can become a widely used alternative. To make saffron supplements, powder from the dried *Crocus sativus* stigmas is turned into a capsule. Saffron is generally very expensive because many plants are needed to make a tiny amount of the spice. Therefore, saffron supplements aren't easy to find, and they can also be costly.

Kava kava (*Piper methysticum*)

Kava kava (*Piper methysticum*) might offer people with depression some relief from their symptoms. The kava plant is a tall shrub that is native to the South Pacific. Its root is used commonly for medicine. Kava can make people feel intoxicated, so teas and tinctures made from the root have been used for centuries to help increase relaxation and reduce anxiety. Kava doesn't necessarily treat depression or the underlying causes. Instead, it may help patients who use it feel more relaxed and calmer. Researchers found that a water-based version of kava produced anti-anxiety and antidepressant activity in people with depression. Researchers also noted the extract brought up no safety concerns in the amount and duration studied (250 milligrams of kavalactones per day). Kava roots can be ground to a pulp and added to water to create a thick mixture that may be consumed for medicinal purposes. For over-the-counter supplements, dried kava root is crushed and then turned into a capsule. Kava is measured in kavalactones, which are the chemical compounds derived from the root.

Herbs not yet proven to ease depression

There is definitely need for major scientific research to support postulate of the following plant species with antidepressant activity. These could help curb side-effects caused by synthetic drugs to enhance brain function and general well-being of the human body. These include the following herbs:

- *Crataegus oxyacantha* (hawthorn)
- *Eschscholzia californica* (California poppy)
- *Ginkgo biloba*
- *Lavandula angustifolia* (lavender)
- *Matricaria recutita* (chamomile)
- *Melissa officinalis* (lemon balm)
- *Passiflora incarnate* (maypop, or purple passionflower)
- *Valeriana officinalis* (valerian)

Natural Immune-Boost Alternatives to Depression

Black Beans

Beans are a magnesium-rich food that helps boost the happiness hormone, serotonin, and bloated feeling, too. Black beans are antioxidant-rich and contains nutrients like iron, fiber, copper, zinc and potassium.

Beets

Beets contains betaine, which supports serotonin production in the brain, elevating your mood along the way. Beets also have a potent dose of folic acid in them, which stabilizes emotional and mental health, improving brain function and

mood stability.

Seaweed

Seaweed mostly in salad is packed with depression-fighting iodine. Iodine is critical for thyroid to function properly, which influences energy, weight, and even brain functions.

Chamomile Tea

Research shows that chamomile tea not only brings on better sleep but improves your cognitive functioning during the day.

Blueberry Juice

Darkly coloured berries lead to weight loss, decreasing the formation of fat cells by up to 73%. Berries also carry heavy doses of vitamin C. Blueberries happens to be a great source of resveratrol; an antioxidant pigment linked to relief from depression. Berries are a favourite antioxidant-containing food for many reasons. One of which is because they help make the brain happy. Studies have shown that the flavonoid in blueberries can improve your mood.

Red Peppers

Red bell peppers which have been allowed to ripen on the vine and not picked when still green—have considerably higher nutrient scores than green bell peppers. They possess more than double the vitamin C and up to 8 times as much vitamin A present in green ball pepper. In a recent survey of nutrient density, red peppers were ranked as second only to leafy greens as the most potent of vegetables. The higher concentration of vitamins helps to improve depression, as well as boost immune system and lessen cold symptoms.

Coconut

Coconut contains medium-chain triglycerides, fats that fuel better moods; a joint study from researchers found that coconut has a neuro-protective effect. It shows to have good anti-depressant activity.

Pumpkin Seeds

Pumpkin seeds are one of the best food sources of tryptophan, an amino acid that helps promote the production of serotonin in the brain. Tryptophan can also have a calming effect, making it easier to sleep at night and wake up feeling refreshed, excited and happy.

Mussels

Mussels are loaded with some of the highest naturally-occurring levels of vitamin B12. It helps insulate the brain cells, keeping the brain sharp as one ages. Mussels also contain the trace nutrients zinc, iodine, and selenium, which keep the thyroid a major mood regulator effective. Mussels are high in protein and low in fat and calories, making them one of the healthiest, most nutrient-dense foods that can reduce depression.

Swiss Chard

This leafy green comprises of magnesium, a nutrient essential for the biochemical reactions in the brain that increase the energy levels of the body. A 2009 research study found out that higher magnesium intake was associated with lower rates of depression.

Blue Potatoes

Blue potatoes, often a rare specie gets their colour from

anthocyanins, powerful antioxidants that provide neuro-protective benefits like bolstering short-term memory and reducing mood-killing inflammation. Their skins are also loaded with iodine, an essential nutrient that helps regulate the thyroid, suppressing exhaustion and depression.

Asparagus

This vegetable is one of the top plant-based sources of tryptophan, which serves as a basis for the creation of serotonin—one of the brain's primary mood-regulating neurotransmitters. Asparagus also boasts high levels of folate, a nutrient that may fight depression; in fact, research suggests that up to 50 percent of people with depression suffer from low folate levels.

Cherry Tomatoes

Tomatoes are a great source of lycopene, an antioxidant that protects your brain and fights depression-causing inflammation. Research shows that organic tomatoes have extremely high lycopene content.

Spinach

Iron deficiency is a challenge many experience which results in energy loss and body weakness. Iron deficiency is common and can result in feelings of exhaustion, weakness, and irritability. Therefore, consuming probiotic-rich yogurt, fatty fish and an L-glutamine supplement can improve health and help the body to absorb iron more efficiently. For more efficient result, its useful to eat tangerine with spinach because tangerine helps the body absorb iron present in the spinach.

Green Tea

Green tea contains a naturally-occurring caffeine that gives boost. The epigallocatechin-3-gallate, or EGCG, found in green tea has been linked to improvements in mood. This could reduce the risk of memory loss and neuron-death-related emotional health issues. While technically a drink, green tea deserves a spot on the list of mood-boosting foods. Green tea has many benefits. Research has linked it to lower rates of Alzheimer's, Parkinson's, and many other ailments. One type of green tea, matcha, is a particularly rich source of the amino acid L-theanine, which can help you to relax and maintain a calm demeanor.

Bananas

Bananas are considered a low-glycemic food, meaning they are less likely to trigger an insulin spike with good amount of potassium essential for healthy mind. In fact, a study reveals that diets with potassium helped reduce symptoms of depression and stress.

Though there is no RDA for potassium, it is recommended that you get around 1600-2000 mg per day. One banana can provide over 450 mg. Bananas are also rich in vitamin B6, which the body needs to synthesize serotonin.

Peas

Peas are a vegan-friendly source of iron, which can help combat depressions that often accompany iron-deficiency anemia. All that iron can also help reduce feelings of exhaustion.

Brussels Sprouts

Brussels sprouts are not only a good source of potassium,

which has been linked to reduced symptoms of depression, they also pack more than a day's worth of vitamin C per cup, supplementation with which a study has found effective at combating stress.

Raisins

Raisins gives four percent of the daily iron requirement, as well as plenty of magnesium, B6, and vitamin C.

Avocado

Avocados are rich in B vitamins particularly vitamin B6 and also rich source of folate. One avocado provides around one-third of your daily folate needs. And when it comes to magnesium, one avocado provides around 15% of the daily needs which is a good source to combat depression of any stage

Collard Greens

This southern staple is good for more than just satiating your appetite. A cup of cooked collard greens packs more than half of the RDA of vitamin C, which can not only help fight off colds and flus, but has been linked to improvements in mood disorders, like anxiety and depression.

Apricots

Apricots may be small, but they're a mighty weapon to wage war on depression. These stone fruits are loaded with vitamin C and beta-carotene, which researchers in India have linked to reduced symptoms of depression and anxiety.

Chia Seeds

Chia seeds pack more depression-busting omega-3s per ounce than salmon, and their high fiber content can help you enjoy a healthier body.

Broccoli

Those teeny-tiny trees are not only a good source of anaemia-defeating iron, they also contain more than a day worth of immune system defender and mood-booster, vitamin C, per cup. Broccoli is rich in chromium, which can increase the body levels of serotonin, nor epinephrine, and melatonin. Because chromium works directly with mood regulators, it has been found to be an effective treatment for depression.

Lemon

The results of a Japanese study reveal that just the scent of citrus fruits, like lemon, can improve a person's mood and reduce effects of depression.

Walnuts

Walnuts are a source of omega-3 fatty acids, as well as being loaded with heart-healthy mono- and polyunsaturated fats.

Lentils

Lentils are a good source of anaemia-fighting iron and energizing B-6, and they also happen to be a great way for vegans and vegetarians to boost the amount of protein in their diet. Studies have linked high-protein diets to reduced anxiety and depression.

Brown Rice

Research has revealed that study subjects who adhered to a gluten-free diet enjoyed relief from their depression and anxiety. Brown rice can also help fight mood-depleting

conditions like iron-deficiency anaemia.

Oranges

Vitamin C in Oranges has been linked to reduced anxiety and depression. In fact, a study found a connection between citrus consumption and depression. Women who consumed two or more servings of citrus daily reduced their risk of depression up to 18 percent.

Kale

Just a single cup of kale contains more than a full day worth of mood-lifting vitamin C. Kale also possesses plenty of potassium, iron, and B-6, all of which have been shown to be serious anti-depressants.

Conclusion

In spite of the pandemic, the medical community supports the use of some herbs and supplements more than others. Studies of these alternative treatments are limited, and the results are sometimes inconclusive. Therefore, more experimental research is needed to support these postulates. The above introduced plant products and herbs could serve as a possible solution for formulation of novel-drugs for the treatment of depression across the globe. More scientific research should be implemented to reduce rate of depression and enhance healthy lifestyle living among humans.

References

1. De Zwart PL, Jeronimus BF, de Jonge P *et al.* Empirical evidence for definitions of episode, remission, recovery, relapse and recurrence in depression: A systematic review. *Epidemiology and Psychiatric Sciences* 2019;28(5):544-562. doi:10.1017/S2045796018000227. PMID 29769159.
2. Reynolds CF, Patel V. Screening for depression: the global mental health context. *World Psychiatry* 2017;16(3):316-317. doi:10.1002/wps.20459. PMC 5608832. PMID 28941110
3. Wang Philip S, Aguilar-Gaxiola Sergio, Alonso Jordi, Angermeyer Matthias C, Borges Guilherme, Bromet Evelyn J, Bruffaerts Ronny *et al.* Use of mental health services for anxiety, mood, and substance disorders in 17 countries in the WHO world mental health surveys. *The Lancet* 2007;370(9590):841-850. doi:10.1016/s0140-6736(07)61414-7. ISSN 0140-6736. PMC 2847360. PMID 17826169.
4. Depression. www.who.int. Retrieved 5 December 2019.
5. Patel V, Weobong B, Nadkarni A, Weiss HA, Anand A, Naik S *et al.* The effectiveness and cost-effectiveness of lay counsellor-delivered psychological treatments for harmful and dependent drinking and moderate to severe depression in primary care in India: Premium study protocol for randomized controlled trials. *Trials* 2014;15(1):101. doi:10.1186/1745-6215-15 101. PMC 4230277. PMID 24690184.