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Review Article



HERBAL REMEDIES FOR COGNITIVE HEALTH: HARNESSING AYURVEDIC WISDOM

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ABSTRACT:

Human brain illnesses treated with synthetic medications are costly, time-consuming symptomatic treatments that can have substantial side effects that are sometimes unavoidable and result in low patient compliance. Therefore, for a variety of conditions affecting the human brain, such as Parkinson's disease, epilepsy, anxiety, etc., herbal and Ayurvedic remedies are recommended over synthetic medications. Numerous neurological diseases have historically been treated with the help of the Ayurvedic medical system. The affordability, ease of use, and low frequency of adverse effects of plant-based products are all significant benefits. These days, there is a lot of focus on the well-established traditional systems of herbal therapies for a variety of brain problems, giving sufferers hope. While 6% of Indians had typical mental illnesses like anxiety, bipolar disorder, and schizophrenia, roughly 2-3% of Indians also had other mental illnesses. The term "mental disease" refers to a wider spectrum of ailments than just insanity and related mental derangements; it also, to some extent, covers emotional problems. Emotional elements that go beyond normalcy can cause someone to become deranged and exhibit mental disorder symptoms. Given the dire circumstances of today, it is imperative that we return to the ancient Indian Ayurvedic medical system. In this system, several plants have been identified for specific purposes in treating a variety of mental illnesses, such as depression, hysteria, anxiety, Parkinson's disease, and epilepsy. It has been demonstrated that Ayurvedic prescriptions, which comprise either a single plant species or a combination of plant materials, are highly effective in treating certain types of illnesses. Herbs and perennial trees with a variety of plant parts, roots, bark, blooms, and seeds are among the plant materials recommended for these issues. The main constituents of these plants have a variety of chemical structures, including terpenoids, flavonoids, peptides, etc. Reviewing the current state of mental illness in society in comparison to Ayurveda's efficient treatment and the issue of synthetic medication side effects has been attempted.

KEYWORDS: Ayurvedic plants, Ayurvedic treatment, Ayurvedic uses, Brain disorder, Chemical constituents, Herbals and Medicinal plants

INTRODUCTION:

It is well acknowledged that nature possesses the most effective remedies for all illnesses that occasionally impair the human body. Plant medicine provides treatment when synthetic medications are ineffective or cause significant adverse effects. Numerous plant species found all over the world have some kind of pharmacological effect on the body. The all-natural method of healing therapy used to treat human problems is herbal treatment. Herbal remedies are once again gaining popularity because synthetic medications, which were formerly widely accepted, are now proven to frequently have negative side effects. Clinical evidence has recently demonstrated that the use of synthetic medications to treat high blood pressure is negatively affecting the mental health of those who get these treatments^[1].

In India, the traditional knowledge of medicinal plants has been passed down through the generations since the Vedic time. Ayurveda had such a profound effect on public opinion in our nation that the influence of the Middle East and Europe was unable to stem its widespread acceptance among the general populace of India and its surrounding nations. Thanks to the persistent efforts of India's herbal enterprises, particularly Dabur, Baidyanath, and others, herbal medicines in the form of Ayurvedic medicines are still widely used and accessible to the general public. These days, Ayurvedic reverse pharmacology is used in drug development, when therapeutic candidates are first found using traditional medical knowledge and then validated by clinical trials^[2-4]. A thorough compilation that includes Ayurvedic prescriptions and the botanical and chemical features of the plants is rare, despite prior reviews providing dispersed or selected information on medicinal plants effective in mental problems. Our ongoing fascination with the chemistry and biology of aromatic and medicinal plants led us to write this review article on a few of the plants used in the Ayurvedic medical system to treat brain diseases^[5-9].

Current Circumstance

The global community observes World Mental Health Day on October 10th of each year. Globally, there is growing recognition of the need of maintaining a balanced mental health and its role in causing illness. By 2020, depression is expected to rank second globally in terms of causes of morbidity and disability, after cardiac illnesses. Regrettably, India leads the world in teenage and young adult suicide rates. Poor socioeconomic conditions, substance misuse, gender inequity, and inadequate mental health infrastructure all exacerbate the disease. Regretfully, India has almost a billion people living there, but only 4010 psychiatrists. Moreover, the largest obstacle to mental therapy in India may be the extreme shame associated with having a mental illness. People choose not to see a mental health professional for an early evaluation because of the stigma^[11-13].

India's low performance in hygiene is one of the factors that have led to a global research ranking it 144th out of 189 countries^[14]. Nonetheless, India received high marks for its superior performance in categories such as harmful alcohol use, overweight, and neglected tropical diseases, which

include communicable diseases. It is evident that over 60 million Indians suffer from mental disorders since the country falls behind the rest of the globe in terms of medical experts and spending on mental health issues. Severe mental illnesses like bipolar disorder and schizophrenia affect about 2-3% of the population. Per the most recent report available in 2005, about 6% of the population suffered from common mental disorders such as anxiety and depression. The Indian Minister of Health and Family Welfare recently cited this statistics from the National Commission on Macroeconomics and Health Forum^[10-14].

Typical Brain Conditions

The phrase "mental disease" refers to a wider spectrum of conditions than just insanity and related mental derangements; it also somewhat encompasses emotional problems. When emotional elements transcend the realm of normalcy, they frequently become deranged and manifest as mental disorder syndromes. According to some estimates, the brain contains 101 billion nerve cells, or neurons, each of which connects to numerous other neurons to form communication networks. These nerve cells perform specific functions such as vision, hearing, smell, and thinking, learning, and remembering. In order to communicate with other cells, brain cells process and store information as well. To keep things running well, a lot of oxygen and fuel are needed for good coordination^[15]. A wide spectrum of mental illnesses in humans, such as schizophrenia, depression, Parkinson's disease, and others, begin to manifest once the system is upset. These illnesses are outside the purview of this review because they involve extremely complicated disruptions in brain function. To provide fundamental information and help understand the most prevalent brain ailments, a brief description has been given below.

Alzheimer's disease

Presenile dementia, which is an acquired mental illness characterized by a loss of intellectual capacity that interferes with social or occupational functioning, was the initial term used to describe Alzheimer's disease. It is linked to regional neuronal loss and brain shrinkage in the hippocampus and basal forebrain. The development of AD is significantly influenced by the beta-amyloid peptide. Numerous investigations have demonstrated the efficaciousness of naturally occurring antioxidants, like vitamin E and beta-carotene, in eliminating free radicals produced throughout the course of this illness. It is thought that acetylcholine, a nerve transmitter, deficiency causes memory loss. It is feasible to raise the amount of this transmitter in the brain by blocking the enzyme's ability to divide or degrade the transmitter material. Medicines made of synthetic materials that prevent the transmitter acetylcholine from breaking down could postpone the onset of the condition^[16-17].

Depression

As opposed to mental or cognitive disorders, depression is a frequent affective condition of the mood. It is the most prevalent affective condition, and hallucinations and delusions are very common. The brain's levels of neurotransmitters like dopamine, acetylcholine, and

adrenaline, among others, are elevated in this medical condition. There are two categories of symptoms with this illness. (a) Emotional symptoms include guilt, demotivation, and feelings of ugliness; (b) Biological symptoms include hunger loss and decreased libido. Depressive syndrome comes in two flavors: (a) bipolar depression, in which manic episodes alternate with episodes of depression, and (b) unipolar depression, in which mood swings are consistently in one direction^[19].

Anxiety

Anxiety is a mental, physical, emotional, and behavioral state that is both psychological and physiological. These elements come together to produce an unpleasant sensation that is usually connected to anxiety, fear, or unease. Anxiety is a broad mood state in the absence of a clear triggering stimuli. It is actually different from fear, which arises when there is an outside threat. Thus, anxiety arises from perceived uncontrollable or inevitable threats, but fear is associated with specific avoidance and escape strategies^[18].

Huntington's

It is the genetic cause of chorea and is known as Huntington's disease, or just HD, Huntington's chorea, or chorea major. It can impact up to 72 persons per million people in Western Europe, and in some isolated areas, the number may be significantly higher. Physical symptoms can appear at any age, although they often do so between the ages of 36 and 45. Although the exact cause of the illness is unknown, some contributing variables have been found. While some of the symptoms of HD can be treated, there is no known cure for the condition. The early physical signs are characterized by chorea, which are jerky, unpredictable, and uncontrollable movements. Dystonia and rigidity eventually become apparent as the disease worsens, giving rise to the main physical symptoms^[20].

Parkinson's

It is a gradual mobility condition that primarily affects the elderly and causes constant shivering. It is frequently linked to dementia, and one of the signs is a resting tremor that usually starts in the hands. Increased resistance to passive limb movement and hypokinesia inhibition of voluntary muscles are indicative of muscular rigidity. In this disorder, the brain's substantia nigra and corpus striatum have lower levels of neurotransmitters like acetylcholine and dopamine. Synthetic medications can sometimes provide temporary relief, but they rarely result in a full recovery^[22].

Epilepsy

The hallmark event in epilepsy is a seizure. In actuality, a cluster of neurons in the brain that discharge impulses at a high frequency is linked to epilepsy. It comes in two varieties: (a) Partial epilepsy: in which only specific brain regions are affected; and (b) Generalized epilepsy: in which the entire brain, including the reticular system, is affected. The specific brain regions implicated determine the symptoms. Long-term usage of common synthetic medications for epilepsy alleviation is conceivable, but side effects must be accepted^[21].

Schizophrenia

Patients with this illness are unaware of current developments and do not collaborate with medical professionals or society in order to receive therapy. There are two kinds of symptoms for this disorder: (a) Negative symptoms include social disengagement and a flattening of emotional reactions and (b) Positive symptoms, such as mental illnesses and delusions. The brain's levels of neurotransmitters like acetylcholine and dopamine are elevated in this situation. Drugs made synthetically can lessen symptoms like delusions, hallucinations, and aberrant thought patterns. In addition to causing weight gain and tremors in certain users, these medications can conflict with other prescriptions and dietary supplements. It goes without saying that the majority of the time, medication is required to treat schizophrenia^[23].

Attention Deficit Hyperactivity Disorder

Though it is not exclusive to children, it is thought to be a condition of theirs. As a matter of fact, 32–72% of children diagnosed with this illness exhibit symptoms of ADHD into adulthood. Furthermore, adults with undiagnosed ADHD may experience difficulties at work or in relationships as they grow older and exhibit more pronounced symptoms. Neurotransmitters in the parts of the brain that regulate attention are less active in those with ADHD. Although the precise source of this chemical imbalance is unknown, genes are assumed to be involved because the condition frequently runs in families. Adults on stimulants have been shown to have fewer symptoms of ADHD and some may even report improved concentration, although complete^[24].

Natural Methods for Mental Healing

As time goes on, innovative methods in the medical field—such as yoga and naturopathy—are being reintroduced. In order to meet the body's fundamental healing needs, a number of people and organizations are working in this area. In actuality, there has been a significant shift in the mindset of those who used opioids; instead, they are now searching for natural remedies like homeopathy, Ayurveda, Siddha, and several traditional medications. By improving blood flow throughout the body and reducing anxiety and excitement in the mind, yoga and meditation are also essential for mental and physical well-being. Worldwide, plant-based medical systems have demonstrated remarkable efficacy in treating a wide range of ailments. This also holds true for issues related to mental disorders. Herbs have been shown to have excellent capabilities for treating anxiety and panic attacks that affect the central nervous system, much like some prescription medicines, but without the unfavorable side effects^[25-27]. Lemon balm is an effective way to reduce tension and anxiety. The plant chamomile has long been recommended as a remedy for anxiety. In addition to being used to alleviate anxiety, kava roots are also widely utilized to treat sleep disorders like insomnia. When added to meals or tea, passion blossom is also used as a herb for anxiety. Chinese have historically utilized ginseng as a natural anxiety. Cannabis sativa can be consumed or smoked to reduce anxiety. While this relief is known to people all over the world, the medication is occasionally abused. Worldwide, valerian is utilized as a natural sedative for sleeplessness and panic episodes. It is regarded as safe for short-term use and is also a

minor pain reliever. Well-known European herb ginkgo biloba has neuroprotective qualities that make it helpful for treating learning disabilities and enhancing memory^[16-28].

Ayurvedic herbs are mostly used to treat brain-related conditions

At present, traditional medicine, such as Ayurveda, is being looked to for its brain-healing prescriptions as a dependable treatment for psychiatric problems that have negligible or no side effects. Indian medical systems have made significant advancements in the treatment of brain-related illnesses. The most significant of the Indian medical systems is Ayurveda, which explains how to cure brain-related illnesses by using hundreds of different plants either singly or in combination. The plants, which range from shrubs and forest trees to wild and cultivated herbs, are members of several plant families. The majority of prescriptions contain multiple plant parts, which is consistent with the synergistic action of most Ayurvedic medications^[29]. With the exception of brain illnesses with genetic roots, the Ayurvedic herbs.

Ayurvedic herbs are frequently suggested for brain diseases

1. *Adhatoda zeylanica*: When combined with honey, its powder can treat chronic epilepsy.
2. *Bacopa monnieri*: To treat hysteria, mix its juice with "kuth" powder in honey. It is also advised for the treatment of hysteria and epilepsy. It is quite beneficial for memory restoration.
3. *Cannabis sativa Linn*: Asafoetida and the leaves of this plant have been used to treat epilepsy-like symptoms in female patients. It helps with treating insomnia as well.
4. *Datura metel*: Its seeds are used to cure psychosis after being crushed with black pepper.
5. *Eclipta alba*: This plant is used to treat migraines by rubbing a mixture of black pepper powder and juice over the forehead.
6. *Ficus religiosa*: A branch extract is used to treat insanity.
7. *Glycyrrhiza glabra*: Powdered root used in ghee helps alleviate epilepsy symptoms.
8. *Hibiscus rosasinensis*: Powdered dried leaves and blooms are added to sweet milk to enhance memory.
9. *Juglans regia*: A nasal drop used to treat hysteria is made from powdered walnut seeds diluted with juice.
10. *Mucuna pruriens*: It has been discovered in Ayurveda to be beneficial for Parkinson's illness.
11. *Nardostachys jatamansi*: When consumed with ghee, it helps treat epilepsy.
12. *Piper longum*: Milk containing extracts is used to treat migraines.
13. *Solanum surratens*: To cure epilepsy, crush the plant's roots and poppy seeds in a child's urine and apply the mixture to the nose.
14. *Terminalia chebula*: Grind the seeds in warm water and apply the mixture to the forehead to relieve migraine headaches.
15. *Vitex negundo*: Its fruit powder is used to treat mental illnesses.

16. *Withania somnifera*: It is a plant that has been used in Ayurveda medicine to treat a variety of ailments as well as general bodily strength. It has also been scientifically proven to be beneficial in cases of ischemia.

Ayurvedic medicine is currently preferred over synthetic medications

The euphoric effects of the majority of synthetic mental medications are produced by actions in the brain. But occasionally, seizures, strokes, and direct toxic effects on brain cells also result in damage. Repeated drug use can also cause abnormalities in the way that several brain circuits that regulate stress, decision-making, pleasure, impulse control, memory, learning, and other processes function, which might result in a brain illness. Addicts find it more difficult to feel pleasure in response to natural rewards, such as fulfilling social interactions, as a result of these alterations. Furthermore, the majority of synthetic medications prescribed for brain problems include some form of adverse effects and are meant to be used over an extended period of time. A plethora of synthetic medications targeting brain problems are available on the market, the majority of which have documented adverse effects on brain or other organ function^[30].

Synthetic medications' side effects and after effects for brain diseases

The primary reason that the majority of people worldwide use allopathic drugs in an emergency is their efficacy. Every symptom seems to have its own drug, and then there seems to be a pill for every one of their side effects. Since allopathic medications primarily treat symptoms rather than underlying causes, it is well known that they only provide a partial cure. It is crucial to remember that allopathy does not allow for individuality because patients with similar symptoms but distinct diseases are given the same medication. The negative effects of synthetic medications for brain-related problems have been investigated, and several papers on antidepressants, anxiety reducers, etc., have addressed these medications. As a result, the side effects of all medications do not need to be discussed in this essay; however, the following is an example for anticonvulsant medications. By preventing the discharge and inducing hypnosis, they are used to manage convulsions. These artificial medications, such as leviteracetam and diazepam, are being sold to treat epilepsy. Despite their novel range of usefulness, these agents exhibit concerning side effects. However, because of their few adverse effects, the use of Ayurvedic herbal medications as an adjuvant in the treatment of epilepsy appears to be more advantageous and is becoming more and more common^[30-31].

Ayurvedic medications with minimal side effects and after effects

The core tenet of Ayurveda is the "five great elements," which states that all five elements—earth, fire, water, space, and air—that make up the human body must coexist harmoniously with any flaw, tissue, or impurity. This implies that the three elemental energies—Vata, Kapha, and Pitta—should be in equilibrium. According to Ayurveda, the body stays healthy when these three energies are in balance or exist

in equal amounts; otherwise, it becomes unwell in a variety of ways. Ayurveda treats the underlying cause of illness and, in the majority of cases, offers a lasting cure. It is mostly associated with natural remedies. Ayurvedic patients typically not only recover from their illness but also develop a lifelong immunity. The primary benefit of Ayurveda over allopathy is that the former is the most environmentally friendly method of obtaining a permanent cure and exclusively use natural methods to treat illnesses. It is well acknowledged that Ayurveda not only provides treatment for mental health conditions but also enhances mental capacity by bolstering immunity and preventing additional harm to the body and mind. Taking the recommended Ayurvedic medications helps with focus and other mental functions. *Acorus calamus* extracts are widely believed to be very helpful in bolstering mental health. For instance, depression is a depressing emotion that interferes with our bodies' and minds' normal processes, making us feel unpleasant. Herbal remedies including substances like *Lavandula angustifolia* and *Eschscholzia californica* can be used to cure it. Anxiety and stress often make us hyperactive and oblivious to mood fluctuations. The following Ayurvedic herbs, such as lavender and *Rhodiola rosea*, are useful in reducing stress and anxiety. In a same vein, ADHD impairs one's ability to concentrate, focus, or pay attention to anything. Ayurvedic medications for ADHD are derived from natural herbs, such as *Celastrus paniculatus* and *Bachpania monnieri*, that are known to treat mental illnesses. A person with bipolar disorder may have extreme mood swings and cognitive impairment that interfere with their ability to go about their daily lives normally. Brahmi, passion flower, and a few other Ayurvedic herbs are helpful in treating this.

Since the Ayurvedic system balances the actions of vata, kapha, and pitta to address the underlying causes of illness in the body, the treatment is long-lasting and unquestionably permanent. Because of this, Ayurvedic treatment is more widely accepted in society than synthetic medications, which typically have negative side effects despite focusing primarily on a patient's symptoms to provide short-term comfort. Aside from this, Poly Herbal Formulations comprise the majority of Ayurvedic medicines. Because PHF has definite benefits that allopaths do not have, it has becoming more and more popular. PHF has become well-known because it provides distinct benefits that are absent from allopathic medications, including excellent efficacy in treating a wide range of illnesses. Different bioactive phytoconstituents in herbal medicines contribute to their therapeutic benefits, which are further enhanced when appropriate herbals are combined to generate phytohemphomogenous formulations (PHFs). PHFs often have a broad therapeutic range, are safe at high doses, and are efficacious even at low doses, demonstrating a superior risk to benefit ratio^[32-34].

CONCLUSION:

The medical systems of Ayurveda and Allopathy operate on separate concepts. Allopathic medications are administered based on the symptomatic premise, whereas Ayurvedic medicine balances the three energies needed to sustain health.

Thus, a proper investigation into the direct comparative evaluation of pharmacological efficacy for brain-related ailments has not yet been conducted. It is widely acknowledged, therefore, that synthetic medications typically only provide symptomatic alleviation and seldom offer a permanent cure. It's time to hunt for a recognized alternative medical system because over 62 million people in India suffer from mental illnesses and the nation falls behind the rest of the world in terms of hospital spending and treatment. According to estimates, 3% of Indians are thought to have bipolar disorder or schizophrenia, whereas 6% of the population has common mental illnesses including anxiety. It has been demonstrated that Ayurvedic medications are quite effective in treating certain conditions. The world is currently, and understandably, looking to ancient medicines—including Ayurveda—with their ability to heal the brain for a dependable treatment that has no or very few adverse effects. The current review clarifies that the majority of brain-related illnesses can be effectively treated by the Ayurvedic medical system. Some Ayurvedic treatments that are currently included in Ayurvedic prescriptions and have been reported for mental disorders have been included in this study in a timely manner. Thus, it can be said that, in comparison to allopathic medications, the Ayurvedic herbal medicine's are unquestionably a treasure trove of plant medicines that restores the much-needed hope for the comprehensive and long-lasting treatment of mental disorders using natural methods with negligible side effects.

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