

Research on Ayurvedic Plants Help to Treat Brain Disorders

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Abstract

The herbal and Ayurvedic treatments are preferred over synthetic drugs for a range of human brain disorders including, Alzheimer's disease, Parkinson's disease, depression, epilepsy, schizophrenia, anxiety, etc. Nearly 1-2% Indians suffered from schizophrenia and bipolar disorder whereas 5% population showed common mental disorders like depression, anxiety, convulsion, etc. With the current alarming situation, it is high time to look back to the ancient Indian Ayurvedic system of medicine wherein a number of plants have been described for specific uses for a range of mental disorders, including migraine, epilepsy, convulsion, hysteria, paralysis, memory loss (Alzheimer's), insomnia, anxiety, Parkinson's disease, insanity, depression, etc.

Keywords: ayurvedic plants; herbals; medicinal plants; brain disorder; ayurvedic treatment; ayurvedic uses; chemical constituents; ADHD; WHO

Introduction

It is rightly accepted that the nature has best answers to all the diseases affecting the human body from time to time. Many of the plant species distributed throughout the world, have some pharmacological action on the body. Herbal treatment is the natural form of healing therapy to patient's mental health cures the diseases of mankind [1].

Herbal medicines in the form of Ayurvedic medicines are still popular and available for common masses due to the untiring efforts of herbal industries of India, especially the Patanjali, Dabur, Zandu, Baidyanath, Himalaya, etc. Although the scattered or selective information on medicinal plants, useful in mental disorders, is available in previous reviews but a comprehensive compilation, incorporating the Ayurvedic prescriptions, botanical and chemical aspects of the plants, is hardly traceable [2-4]. Our continued interest on the chemistry and biology of medicinal and aromatic plants prompted us to come up with this review article on some of the plants prescribed in Ayurvedic system of medicine for brain disorders [5-9].

Current Situation

The awareness regarding the balanced mental health is increasing and it is now recognized as a major cause of morbidity worldwide. As per WHO estimate, depression will be second only to cardiac diseases as the leading cause of morbidity and disability worldwide by 2020 [10]. India is, unfortunately, the leading country in adolescent and young age suicides. Because of the stigma people don't prefer going to a mental health professional for an early evaluation [11-13]. In a global study, India has been ranked 143rd among 188 countries on a range of health indicators including its poor performance on hygiene. Overweight and harmful alcohol

consumption [14]. As India lags behind the world in medical professionals and spending on mental health issues, it is obvious that more than 60 million Indian populations suffer from mental disorder. According to a more recent report by National Mental Health Survey (NMHS) commissioned by Government of India and implemented and coordinated by National Institute of Mental Health and Neuro Sciences (NIMHANS), Bangalore, about 150 million Indians aged 18 and above and 7.3% of those aged 13 to 17 years of the total population are suffering from various mental disputes and are in need of mental care service. India's health budget on mental health care is surprisingly 7.5 times lesser than Bangladesh. There is acute shortage of psychiatrists in India with 3 psychiatrists per million populations which is 18 times lesser than the commonwealth nations' norm of 56 psychiatrists per million people [10-13].

Common Brain Disorders

The term mental disease or brain disorder is not restricted to mean insanity and allied conditions of mental derangement but also includes, to certain extent, the emotional disorders. It is stated that the brain has 100 billion nerve cells (neurons) and each of them connect with many others to form communication networks [15]. To do their work brain cells, like tiny factories, receive supplies, generate energy, construct equipment, and get rid of the waste. Brain cells also process and store information to communicate with other cells. These diseases have very complex disturbance in the brain function and are beyond the scope of this review.

Alzheimer's Disease

Alzheimer's disease (AD) was originally defined as presenile dementia and means an acquired mental disorder with loss of intellectual abilities to

interfere with social or occupational functioning. Although there is no cure for AD by synthetic drugs, but, to certain extent, it can be managed with them. The loss of memory is considered to be the result of shortage of a nerve transmitter, acetylcholine. Synthetic drugs that inhibit the breakdown of the messenger or transmitter acetylcholine, may delay the development of the disease [16, 17].

Anxiety

Anxiety is a psychological and physiological state characterized by cognitive, somatic, emotional, and behavioral factors. As such, anxiety is the result of threats that are perceived to be uncontrollable or unavoidable whereas fear is related to the specific behaviors of avoidance and escape [18].

Depression

Depression is a common affective disorder of mood rather than disturbances of thought or cognition. Neurotransmitters levels such as dopamine, acetylcholine, nor epinephrine etc., in the brain are increased. The symptoms of this disease are of two types (i) biological symptoms: retardation of thought, loss of libido, sleep disturbance and loss of appetite (ii) emotional symptoms: feelings of guilt, loss of motivation, ugliness etc. [19].

Huntington's disease

It is called as Huntington disease or simply HD, Huntington's chorea, chorea major, and is the genetic cause of chorea. In 1990s, genetic testing was made possible but as such the counseling for HD had to be developed and became a model for other dominant disorders also. The characteristic initial physical symptoms are jerky, random, and uncontrollable movements called chorea. As the disorder progresses, rigidity and dystonia become evident gradually leading to the dominant physical symptoms [20].

Epilepsy

In fact, epilepsy is associated with high frequency discharge of impulses by a group of neurons in the brain. It can be of two types: (i) Partial epilepsy: In this the localized areas of brain are damaged. (ii) Generalized epilepsy: In this case total brain including reticular system is damaged [21].

Parkinson's disease

It occurs mainly in the elderly and is a progressive disorder of movement showing continuous shivering. It is commonly associated with dementia and the symptoms include tremor at rest usually starting in the hands. The muscle rigidity can be detectable as an increased resistance in passive limb movement and hypokinesia suppression of voluntary muscles. In this condition the neurotransmitter levels, such as dopamine, 5- hydroxy tryptamine, acetylcholine, nor-epinephrine, are decreased, mainly in the substantia nigra and corpus striatum of brain. With synthetic drugs short relief is possible but complete cure is, normally, unachievable [22].

Schizophrenia

The patients of this disease don't know what is happening at present and he does not cooperate with the society and physician for treatment. This disorder has 2 types of symptoms: (i) Positive symptoms: abnormal behavior, delusions, Hallucination, thought disorders. (ii) Negative symptoms: flattening of emotional responses and withdrawal from social contact. In this condition the level of neurotransmitter such as dopamine, 5- hydroxytryptamine, acetylcholine, nor-epinephrine level is increased in the brain. Synthetic drugs can reduce symptoms such as hallucinations, delusions and abnormal thinking. Some people have troubling side effects, including tremors and gaining weight and these drugs may also interfere with other medicines or supplements. It is needless to state that in most cases, medication is a must to treat schizophrenia [23].

Attention Deficit Hyperactivity Disorder (ADHD)

It is considered as a disorder of children but it is not limited to them. In fact, 30- 70% of kids with this disorder, continue showing symptoms of ADHD

when they grow up. In addition, people who were never diagnosed ADHD in childhood may develop more obvious symptoms when grown up, causing trouble on the job or in relationships. In people with ADHD, the neurotransmitters are less active in areas of the brain that control attention. It is exactly not known what causes this chemical imbalance, but it is thought that genes may play a role as this disorder often runs in families. It has been found that adults given stimulants have fewer ADHD symptoms and some of them may feel better concentration, but complete cure is often not seen [24].

Natural Ways of Healing of Mind

The passage of time, new techniques in the medical field are being reintroduced that include herbal healing, yoga, meditation, naturopathy, acupuncture, etc. As a matter of fact, there has been enormous change in the mind set of people who once depended on painkillers, are now looking for natural treatments, including Ayurvedic, traditional Chinese, Siddha, Unani, Homeopathy and a number of folklore medicines [25]. It is well proven that herbs have excellent properties for treating panic and anxiety affecting the central nervous system, in much the same way as some prescription drugs, without the negative side effects. Chamomile tea has been a highly touted herb for anxiety. The roots of kava are used for anxiety and are also well known in the treatment of sleep disorders such as insomnia. Chinese have used ginseng since long for anxiety and natural immune booster. Valerian is used throughout the world as a natural sedative and is used for insomnia and panic attacks. Ginkgo biloba and Hypericum perforatum are very well-known Chinese and European plants with neuroprotective properties and useful in improving memory and treating the learning dysfunction [16, 28].

Ayurvedic plants mainly described for brain related disorders

Currently, the world is looking towards brain healing prescriptions of traditional medicines, including Ayurveda, for a reliable cure with no or minimal side effects for psychiatric disorders. Indian systems of medicine are very well developed for treating the brain related disorders. The most important among the Indian systems of medicine is Ayurveda which describes the use of hundreds of plants individually or in combination for treating brain related disorders. Description of each and every plant is beyond the scope of this review and has been taken up independently [29]. Current trend on preference for Ayurvedic treatment over synthetic drugs Most of the synthetic mental drug's act in the brain to produce their euphoric effects. However, sometimes they also cause damage due to seizures, stroke and direct toxic effects on brain cells. A brain disorder also occurs when repeated drug use leads to changes in the function of multiple brain circuits controlling the stress, decision making, pleasures, impulse control, memory, learning and other functions. These changes make it harder for those with an addiction to experience pleasure in response to natural rewards, such as food, positive social interactions, sex, etc. Additionally, most of the synthetic drugs for brain disorders are prescribed for a long-term use and have been showing some kind of side and after effects. There is a long list of synthetic drugs for brain disorders floating in the market, most of them with proven side effects on brain function or other organs of the body [30].

Side and after effects of synthetic drugs for brain disorders

The effectiveness of allopathic medicines during an emergency is the main reason why it is adopted by most of the people all around the world. In allopathy, the doctors are restricted to concentrate on the symptoms of a disease and not on the causes of those symptoms. It appears that there is a pill for each symptom and then, a pill for all their side effects. It is known that allopathy offers only partial cure, as these drugs are made to mostly cure the symptoms, not the root cause. It is important to note that there is no place for individuality in allopathy as the same pill is given to the patients suffering from different diseases of similar symptoms. The synthetic drugs for brain related disorders have been studied for harmful side effects and have been covered in a number of documents for psychostimulants, antidepressants,

antipsychotics, anti-anxiety, etc. [30]. Therefore, the adverse effects for all drugs need not be covered in this paper but an example can be cited for the anticonvulsant drugs, as follows. They are used to control the convulsions by inhibiting the discharge and then producing hypnosis. These synthetic drugs, viz. phenytoin (PHT), diazepam, valproate (VPA), leviteracetam, etc., are being marketed for the treatment of the epilepsy. Although these agents have new spectrum of efficacy but show alarming adverse effects [31].

Popularly, the extracts of *Bacopa monnieri* (brahmi), *Acorus calamus* (vach), *Celastrus paniculatus* (jyotismati) are considered extremely beneficial in strengthening mental condition. Although a detailed list of Ayurvedic plants and their potential to treat brain related disorders are given in, some specific examples of Ayurvedic treatments for common mental diseases could be discussed. For example, the depression is a feeling of dejection affecting the natural functioning of our mind and body thus tend to become unhappy. It can be treated with herbal medicines rich in ingredients like, *Crataegus oxyacantha* (hawthorn), *Eschscholzia californica* (California poppy), *Ginkgo biloba*, *Lavandula angustifolia* (lavender). Stress and anxiety tend to make us hyper and unaware about mood swings. Following Ayurvedic plants are effective to counter stress and anxiety, mulungu bark, *Rhodiola rosea*, ashwagandha, lavender, etc. Similarly, ADHD reduces a mind's capability to pay concentration, to focus or pay attention to anything. Ayurvedic medicines for ADHD is made from natural herbs that cure mental disabilities, for example, *Centella asiatica* (mandukparni), *Bacopa monnieri* (brahmi), *Withania somnifera* (ashwagandha), *Celastrus paniculatus* (jyotismati), etc. The bipolar disorder results in an unusual shift in mood, and activities affecting the mental ability of a person to carry out regular day to day activities. To cure this, brahmi, passion flower and several other Ayurvedic herbs are quite useful [32].

Results

In our research, we found that allopathic and Ayurvedic systems of medicine work through independent principles. Allopathic drugs are prescribed on symptomatic principle while Ayurvedic through the balance of three energies (vata, pita and kapha) required for maintaining good health. Therefore, direct comparative study on the efficacy of the drugs for brain related illnesses, has not been properly studied yet. However, it is well understood that in most of the cases, the synthetic drugs generally bring relief through a symptomatic treatment and hardly promise permanent cure. Since more than 60 million Indian populations suffers from mental disorders and the country lags far behind the world for treatments and spending in the hospitals for mental cure, it is high time to look for the established alternative system of medicine. It was estimated that nearly 1-2% Indians suffer from schizophrenia and bipolar disorder whereas 5% population showed common mental disorders like depression, anxiety, convulsion, etc. The Ayurvedic prescriptions have been proven to be very useful against such disorders. Currently, the world is rightly looking towards brain healing properties of traditional medicines, including Ayurveda, for a reliable cure with no or minimal side effects. The present review clearly explains that the Ayurvedic system of medicine is very well developed for treating most of the brain related disorders. This review has right timely included some of the Ayurvedic treatments, which have been described for mental disorders and are currently part of the Ayurvedic prescriptions. Thus, it could be concluded that the Ayurvedic system of herbal medicine is certainly a treasury of plant drugs which brings back the much sought after hope for the complete and permanent treatment of mental disorders through natural means with minimum side effects as compared to the allopathic drugs.

Conclusion

Lastly, in our research, we were able to conclude that in most of the cases, the synthetic drugs generally bring relief through a symptomatic treatment and hardly promise permanent cure. Since more than 60 million Indian populations suffers from mental disorders and the country lags far behind the world for treatments and spending in the hospitals for mental cure, it is high time to look for the established alternative system of medicine. Currently,

the world is rightly looking towards brain healing properties of traditional medicines, including Ayurveda, for a reliable cure with no or minimal side effects. This review has right timely included some of the Ayurvedic treatments, which have been described for mental disorders and are currently part of the Ayurvedic prescriptions. Thus, it could be concluded that the Ayurvedic system of herbal medicine is certainly a treasury of plant drugs which brings back the much sought after hope for the complete and permanent treatment of mental disorders through natural means with minimum side effects as compared to the allopathic drugs.

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References

1. <http://health.economictimes.indiatimes.com>.
2. Sandhya S, Vinod KR, Sravan K (2010). Herbs used for brain disorders. *Hygeia J D Med* 2:38-45.
3. Rao RV, Olivier D, John V, Bredesen DE (2012). Ayurvedic medicinal plants for Alzheimer's disease: a review. *Alzheimer's Res Ther* 4:22-30.
4. Younus M, Younus A, Shahbaz I (2015). Value of Ayurvedic medicinal plants as psychotherapeutic agents-A review. *Intern J Innov Sci Engg Tech* 2:144-148.
5. Tewari R, Rout PK, Misra LN (2016). Simultaneous RP-HPLC-PDA-RI separation and quantification of pinitol content in *Sesbania bispinosa* vis-à-vis harvesting age. *Plant Biosyst.*
6. Gupta M, Rout PK, Misra LN, Gupta P, Singh N, et al. (2016). Chemical composition and bioactivity of *Boswellia serrata* Roxb, essential oil in relation to geographical variation. *Plant Biosyst.* 151:623-629.
7. Ahmad F, Misra LN, Gupta VK, Darokar MP, Prakash O, et al. (2016). Synergistic effect of (+)-pinitol from *Saraca asoca* with β -lactam antibiotics and studies on the in-silico possible mechanism. *J Asian Nat Prod Res* 18:172-183.
8. Ahmad F, Misra LN, Tewari R, Gupta P, Gupta VK, Darokar MP (2016). Isolation and HPLC profiling of chemical constituents of *Saraca asoca* bark. *Indian J Chem B* 55B: 353-361.
9. Ahmad F, Misra LN, Tewari R, Gupta P, Mishra P (2016). Anti-inflammatory flavanol glycosides from *Saraca asoca* bark. *Nat Prod Res* 30:489-492.
10. http://www.who.int/mental_health/evidence/atlas/profiles/ind_mh_profile.pdf?ua=1
11. Anonymous (2016). Nearly 60 million Indians suffer from mental disorders.
12. Anonymous (2016). World Mental Health Day: Stigma continues to be the biggest barrier for mental health care in India.
13. <http://health.economictimes.indiatimes.com/news/diagnostics/150-millionadult-indians-suffer-from-mental-disorder-nmhs/55043069>
14. <http://timesofindia.indiatimes.com/india/On-health-front-India-143rd-among-188-nations-Study/articleshow/54473135.cms>
15. http://www.human-memory.net/brain_neurons.html

16. Hassan MAG, Balasubramanian R, Masoud AD, Burkan ZE, Sughir A (2014). Role of medicinal plants in neurodegenerative diseases with special emphasis to Alzheimer's disease. *Int J Phytopharmacol* 5:454-462.
17. Perry E, Howes MR (2011). Medicinal plants and dementia therapy: Herbal hopes for brain aging? *CNS Neurosci Therap* 17:683-698.
18. Martin EI, Ressler KJ, Binder E, Nemeroff CB (2009). The neurobiology of anxiety disorders: Brain imaging, genetics, and psychoneuroendocrinology. *Psychiatr Clin North Am* 32:549-575.
19. Benedetti F, Bernasconi A, Pontiggia A (2006). Depression and neurological disorders. *Curr Opin Psychiatry* 19:14-18.
20. Finkbeiner S (2011). Huntington's disease. *Cold Spring Harbor Perspect Biol* 3:1-24.
21. Brodtkorb E, Torbergsen T, Nakken KO, Andersen K, Gimse R, et al. (1994). Epileptic seizures, arthrogryposis, and migrational brain disorders: a syndrome? *Acta Neurol Scand* 90:232-240.
22. Ríos J, Onteniente M, Picazo D, Montesinos M (2016). Medicinal plants and natural products as potential sources for antiparkinson drugs. *Planta Med* 82:942-951.
23. DeLisi LE, Szulc KU, Bertisch HC, Majcher M, Brown K (2006). Understanding structural brain changes in schizophrenia. *Dialogues Clin Neurosci* 8:71-78.
24. Curatolo P, D'Agati E, Moavero R (2010). The neurobiological basis of ADHD. *Ital J Pediatr* 36:79-85.
25. Misra LN (2013). Traditional phytomedicinal systems, scientific validations and current popularity as nutraceuticals. *Int J Trad Nat Med* 2:27-75.
26. Balkrishna A (2008). *Secrets of Indian herbs for good health*. Divya Prakashan, Patanjali Yogpeeth, Haridwar, India pp:1-420.
27. Balkrishna A (2014). *Ayurved jadi-buti rahasya (Vol. 1-3)*. Divya Prakashan, Patanjali Yogpeeth, Haridwar, India pp:1-1650.
28. Husain A, Virmani OP, Popli SP, Misra LN, Gupta MM, et al. (1992). *Dictionary of Indian Medicinal Plants*, CIMAP, Lucknow, India pp:1-546.
29. Balkrishna A, Misra LN (2017). Brief chemo-botanical account of some Ayurvedic plants useful in mental health. *Nat Prod J Commun*.
30. Anonymous (2008). *The side effects of common psychiatric drugs-A report by the citizens commission on human rights international*.
31. Pandey SK, Jangra MK, Yadav AK (2014). Herbal and synthetic approaches for the treatment of epilepsy. *Intern J Nutr Pharmacol Neurol Dis* 4:43-52.
32. <http://www.dalmiahealth.com/ayurvedic-treatment-for-mental-health-problems>.



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