

**THE ROLE OF *MEDHYA RASAYANA* IN THE MANAGEMENT OF MENTAL DISORDER A REVIEW ARTICLE****Dhanalaxmi R Sampaganv¹, G. Vinay Mohan², Ishwarayya S. Mathapati³, G. S. Dharmannavar⁴, Punit P⁵**

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**ABSTRACT**

The ageing population is growing faster than the total population especially in the Asian region in this new millennium. Ageing is associated with physiological, functional, and pathological changes which are concerned with the loss of physical agility and mental acuity. Epidemiologic studies revealed that the majority of the older adult community is suffering from Anxiety and Depression symptoms. WHO has proposed that mental health is - 'A state of well-being in which the individual realizes his or her abilities to cope with the normal stresses of life, can work productively and fruitfully and can contribute to his or her community.' Mental disability has become one of the most dreadful conditions across the world. It is prevalent in almost every society and creates an enormous social and economic burden. In *Ayurveda*, *Medhya Rasayana* therapy responds to the status of mental

health and promotes cognitive abilities. The study has been focused to find out the effect of *medhya rasayana* therapy on anxiety and depression among dementia individuals. *Medhya Rasayanas* are a group of medicinal plants described in *Ayurveda* (Indian system of medicine) with multi-fold benefits, specifically to improve memory and intellect by *Prabhava* (specific action). *Medha* means intellect and/or retention and *Rasayana* means therapeutic procedure or preparation that on regular practice will boost nourishment, health, memory, intellect, immunity, and hence longevity. *Medhya Rasayana* affects the human psyche and mainly works at the level of neurotransmitters. Daily use of *Medhya Rasayana* is not only good for memory but also promotion of mental health. So, these *medhya rasayan* (*Yashtimadhu*, *Guduchi*, *Shankhpushpi*, *Mandukaparni*) drugs are effective in the treatment of mental disorders.

Keywords: *Medhya*, *Rasayan*, Anxiety, Depression.

INTRODUCTION

According to *Ayurveda*, the term '*Sharira*' refers to the body including the five senses and mind. The mind is an inter-link between the inert body and the sentient soul. *Ayurveda* is the science where the approach towards disease is not only curative but also preventive mental health. This aspect is similar to mental diseases too. Since the ancient era of the Vedic period, there have been a lot of studies on the establishment of the theories of mental functions. The first reference was seen in *Atharvaveda Samhita*, as *Medhajanana & Medhavardhana Mantra*. All mental disorders occur either due to the hyper or hypo functioning of neurotransmitters e.g., a Low level of serotonin in depression, or a dopamine deficiency can cause Parkinson's disease. Some common mental disorders are depression, anxiety, psychosis, bipolar disorders, schizophrenia, OCD, etc. Further, Depressive symptoms are present in about 15 percent of the older adult community. The common signs and symptoms of depressive disorders include reduced energy and concentration, sleep problems, and decrease in appetite, weight loss, and somatic complaints. older persons are particularly vulnerable to major depressive episodes¹. In addition, anxiety disorders begin in early or middle adulthood, but some appear for the first time after the age of 60. Anxiety is also pervasive in older adults with dementia and symptoms of anxiety occur in 8% to 71% of patients. In addition to that, one month prevalence of anxiety disorders in persons aged 65 and older is 5.5 percent According to *Ayurveda*,

mental abilities are categorized into three which are *Dhi*(acquisition), *Dhriti*(retention)and*Smrti*(recall).*MedhyaRasayana* therapy improves each individual aspect of mental ability and enhances the coordination among them.

Concept of *medhya Rasayan*:

The drugs and herbs that are beneficial to *Medha* are said to be *Medhya dravyas*. These dravyas act by improving components of *Medha* i.e., *Dhi*, *Dhriti*, and *Smriti* as

- Improve cognition and help in improving *Dhi*.
- Improve retention power and help in improving *Dhriti*
- Improve recall i.e., memory, and help in improving *Smriti*.

In *Ayurveda*, *Rasayana* herbs are mentioned to increase the overall health of subjects. These *rasayana* herbs specifically show *Medhya's* actions. *Medhya Rasayana* is a group of 4 medicinal plants that can be used singly or in

combinations. They are *Mandukaparni* (*Centella asiatica* Linn.), *Yastimadhu* (*Glycyrrhiza glabra* Linn.), *Guduchi* (*Tinospora cordifolia*(Wild) Miers) and *Shankhpushpi* (*Convolvulus pleuricaulis* Chois), specially mentioned with a wide range of applications on different systems². Yet in practice, a few more handful drugs used with the same aim are mentioned elsewhere in the *Ayurveda* classical textbooks. They are *Aindri* (*Bacopa monniera*), *Jyothishmati* (*Celastrus panniculata*)*Kushmanda* (*Benincasa hispida*), *Vacha* (*Acorus calamus*), and *Jatamamsi*

(Nardostachys Jatamamsi). *Medhya Rasayana* is used either in polyherbal preparations or alone. This paper is an attempt to present an update on these drugs. The

evidence used is mostly facts from research on animal models or bioactive principles with some preclinical works on the human system.

Table 1:

S.No.	Drug	Botanical name	Part used
1	<i>Mandukaparni</i>	<i>Centella Asiatica</i>	Whole plant juice
2	<i>Yashtimadhu or Mulethi</i>	<i>Glycyrrhiza glabra</i>	Root powder
3	<i>Guduchi (giloy)</i>	<i>Tinospora cordifolia</i>	Stem juice
4	<i>Shankhapushpi</i>	<i>Coccoluvulus Pleuricaulis</i>	Whole plant paste

Mechanism of Action of Brain Degradation: The brain experiences several changes as it matures on genetic, cellular, systemic, and functional levels. Neural cells may experience neurodegeneration. Degeneration of neurons, reduced synthesis of neurotransmitters such as glutamate, acetylcholine, and dopamine, resulting in plaques and tangles, and deposition of lipofuscin (yellow-brown pigment granules left over after lysosomal digestion) in nerve tissue, culminating in nerve breakdown Vitamin B group deficiencies (vitamins B protect brain function by regulating energy metabolism), high levels of inflammatory cytokines, high creative proteins, and a deficiency of dietary anti-oxidants such as Acetyl-L carnitine, which delay the onset of age-related cognitive decline and improve overall cognitive function in the elderly, are all linked conditions that speed up the process of brain ageing. Hyperglycemia damages the hippocampus, raising the risk of Alzheimer's disease. They're all linked to the oxidative processes that occur in the human body³. These are many therapeutic and medicinal formulations motioned in *Ayurveda* to restore the memory and brain. Some of the Rasa's are considered very effective in this process.

Mental disorder: -

1. anxiety disorder- Excessive fear and dread e.g.: - Phobias
2. Psychotic disorder- Disordered thinking e.g.: - Schizophrenia
3. post-traumatic stress- Persistent, frightening memories leading to emotional numbness.

4. Personality disorder- Extremely inflexible personality traits e.g.: - Anti-social disorders, OCD.

2. Mood disorder- Persisting swing in mood or persisting feelings that interfere with daily life e.g.: - depression, bipolar.

Medhya Rasayana:

Properties and actions of ingredients of *Medhya Rasayana:*

1. *Mandukaparni* (*Centella asiatica* (L.) Urb.):

Medhya rasayanah are plants that have a calming effect on the mind, according to *Acharya P V Sharma*. These drugs work as specific molecular nutrients for the brain, promoting better mental health and reducing behavioural disorders⁴. *Medhya Rasayanah* increase brain biochemical nourishment, resulting in mental calmness, attention, and enhanced memory. *Mandukaparni* is an important plant in *Ayurveda* because it acts as an antioxidant, lowering the effects of oxidative stress both in vitro and in vivo. Fresh whole plant juice is used for therapeutic purposes such as *Medhya* (cognitive enhancer). Major constituents are saponin (medacoside, asiaticoside, madecassoside, acetic acid, a new triterpenic acid⁵). They act on behaviour besides being neuroprotective brain growth promoters. *Mandukaparni* helps dendritic arborization and elongation while also protecting neurons from apoptosis. They may help in enhancing concentration power. An active principle present in *Centella Asiatica* imparts anxiolytic activity and thus, it helps in reducing Anxiety.

2. *Guduchi* (*Tinospora cordifolia* (Willd.): *Guduchi*, a part of *Medhya Rasayanah* *Katu, Tikta Rasas* that

maintain mental alertness thanks to their Tridoshahara feature, aids in creating a balance and well-coordinated gripping retention. *Guduchi* (*Tinospora cordifolia* (Wild) Miers) is a large glabrous, deciduous, climbing shrub of the Menispermaceae family found throughout tropical India⁶. Juice of the whole plant is used therapeutically as *Medhya*. Decoction, powder, and *Satwa* are further forms that are utilised (starch extract of the stem). The anti-leprotic, anti-malarial, and anti-stress properties of its root are well documented⁷. The classes of chemical ingredients are alkaloids, diterpenoid lactones, glycosides, steroids, sesquiterpenoids, phenolics, aliphatic chemicals, and polysaccharides. This plant's leaves are high in protein, as well as calcium and phosphorus. It has been discovered to have potent antioxidant properties. It has been shown to enhance Monoamine oxidase (MAO-A and MAO-B) functions, which have been linked to increased levels of brain monoamines and antidepressant activity.

3. *Yasthimadhu* (*Glycyrrhiza glabra* L.): *Yasthimadhu* is a very essential herb, its roots, and rhizomes have preliminary free radical scavenging, cerebral ischemia, and antioxidant ability. *Yasthimadhu* (*Glycyrrhiza glabra* Linn.) is a hardy herb or under shrub belonging to the Fabaceae family. Fine powder of dried root is used internally with milk for therapeutic purposes such as *Medhya*. Active ingredients are glycyrrhizine, flavonones,

isoflavones, glycyrrhetic acid, and six phenolic compounds. The roots and rhizomes of *Glycyrrhiza glabra* are an efficient brain tonic; it increases circulation into the CNS system and balances the sugar levels in the blood. Research revealed *Glycyrrhiza glabra* Linn. Boost blood flow to the central nervous system and maintain a healthy blood sugar level⁸. Significant antioxidant activity is present in *yasthimadhu*. Antioxidants lower the risk of brain damage by shielding vulnerable brain cells from oxidative stress which increases neural function and improves memory.

4. *Sankhpushpi* (*Convolvulus pluricaulis* Choisy): *Sankhpushpi* is a common plant in dry areas of India. *Shankhpushpi* significantly reversed the social isolation stress-induced prolongation of onset and decrease in pentobarbitone-induced sleep, increased total motor activity, and stress-induced antinociception⁹. The principal phyto-constituents in *Sankhpushpi* include kaempferol, -sitosterol, N-hexacosanol, taraxerol, taraxerone, delphinidine, and hydroxy-cinnamic acid¹⁰. In addition to its ability to slow down brain ageing, it has been proven to have anxiolytic, memory-improving, and mood-enhancing properties. It has been shown that *Sankhpushpi* is effective. Dendritic arborization, the neural basis for improved learning and memory, and brain cell regeneration. Affected brain regions may benefit from protection against alterations to the neuron cell body.



1: *Centella asiatica*



Glycyrrhiza glabra



Tinospora cordifolia



Convolvulus pluricaulis

DISCUSSION

Mental illnesses or disorders affect our thinking, feelings, emotions, and behaviour. They could be short-lived or persistent (chronic) They may impact both the proper operation of the neurological system and our capacity for interpersonal communication. An imbalance of our body's and brain's natural biochemicals underlies mental illness. They are linked to changes in neurotransmitters, for instance, dopamine and serotonin levels are lower in depressed people. In this study, the effect of four *Medhya rasayana* *Mandukaparni*, *Yashtimadhu*, *Guduchi*, and *Shankhapushpi* was studied. *Medha* refers to memory and/or retention, whereas *Rasayana* refers to a medicinal treatment or preparation that, when followed on a regular basis, will improve nutrition, health, memory, intelligence, immunity, and hence lifespan. Drugs used in *Medhya Rasayana* work on the Hypothalamus-Pituitary-Adrenal Axis (HPA axis) and normalises the release of neurotransmitters like dopamine, serotonin, and acetylcholine, which might enhance mental performance. These medications enhance memory, retention, and cognition (Dhi) (Smriti).

CONCLUSION

A mental disorder is a condition marked by a change in an individual's emotions, thoughts, behaviour, or psyche encompassing a wide range of behavioural problems. Ayurveda can help people cope with mental stress in a variety of ways. A variety of drugs coined under the term *Medhya Rasayana* has been prescribed which functions at the level of neurotransmitters act as a nervine tonic and promote the functions of *Buddhi* and *Manas* by correcting the disturbance of *Rajas* and *Tamas*. The *Medhya Rasayana* aids in improving intelligence, memory, and recollection. *Medhya Rasayana* not only helps to rejuvenate the nervous system, but it also helps to extend the life and is capable of healing a variety of diseases. It also helps to increase overall immunity, metabolism, skin lustre, and expression (voice). The present study highlights the importance of making the *Medhya Rasayana* in the management of mental disorders.

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