

The Role of *Guduchyadi Rasayana* in Mental Well-Being: A Review Study

Richa Jangpangi^{1*}, Shalinee Kumari Mishra², Kalpesh Dattani³, Arpan A. Bhatt⁴

Abstract

In this era, stress is the main etiological factor behind almost every other disease. In 2020, the COVID-19 pandemic led to a notable increase in anxiety and depressive disorders worldwide. This highlighted the critical need for mental health support during such challenging times. Ageing is a biological process characterized universally by natural degeneration, standing out as a significant risk factor for morbidity and mortality. The Oxidative Stress Theory suggests that mitochondria play a significant role in the ageing process, identifying them as one of the primary organelles involved. In Ayurveda, it is believed that Mana is the integral part of life, which influences the overall health in general. Ayurvedic text describes Rasayana therapy to rejuvenate and nourish the body and mind. According to Classical Ayurvedic texts, Rasayana therapy can bestow longevity, enhanced memory, rejuvenation, etc. Medhya Rasayana herbs are specifically mentioned for power of memory and retention in human beings. Aim and objective of this review study is to establish the role of Guduchyadi Rasayana in mental well-being. Classical texts of Ayurveda, along with the WHO website and approximately 10 other diverse databases, were systematically searched and reviewed. In total 10 studies have been done and registered on Guduchyadi Rasayana till date. Some of them are carried out in reference to mental disorders whereas few others are done on its effect in other systemic diseases viz., Amlapitta, HTN, Gadgada etc. It is effective in enhancement of memory, cognition and overall status of mental health and has anti-stress, anxiolytic, antidepressant, nootropic, tranquilizing, sedative and anti-oxidative properties.

Keywords: Ageing, *Guduchyadi Rasayana*, *Medha*, *Medhya Rasayana*, mental well-being, oxidative stress

*Author for Correspondence

Richa Jangpangi
E-mail: dr.richajangpangi09@gmail.com

¹Scholar, Department of Swasthavritta & Yoga, Institute of Teaching and Research in Ayurveda, Jamnagar, Gujarat, India

²Assistant Professor, Department of Swasthavritta & Yoga, Institute of Teaching and Research in Ayurveda, Jamnagar, Gujarat, India

³Lecturer, Department of Swasthavritta & Yoga, Institute of Teaching and Research in Ayurveda, Jamnagar, Gujarat, India

⁴Professor and Head, Department of Swasthavritta & Yoga, Institute of Teaching and Research in Ayurveda, Jamnagar, Gujarat, India

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INTRODUCTION

The holistic approach of the science of life, Ayurveda, focuses on prevention, promotion, preservation, and cure to achieve a state of complete health physically, mentally, socially and spiritually [1]. Mental health goes beyond the mere absence of mental disorders. According to the World Health Organization (WHO), it is defined as “a state of mental well-being that enables individuals to cope with the stresses of life, realize their abilities, learn effectively, and work productively, while contributing to their community” [2]. Whereas, in this era, stress is the main etiological factor behind every other disease. In 2019, an estimated 970 million people worldwide, or approximately 1 in every 8 individuals, were living with a mental disorder, such as anxiety or depressive disorders.

The year 2020 saw a notable increase in the number of individuals experiencing either anxiety or depressive disorders due to the COVID-19 pandemic [3].

Mental status not only depends upon environmental factors but ageing also plays a very important role in its deterioration. Ageing is a biological process characterized universally by natural degeneration, standing out as a significant risk factor for morbidity and mortality. According to the Oxidative Stress Theory (OST), the production of many Reactive Oxygen Species (ROS)/Free Radicals, both endogenously and exogenously, is associated with ageing. Due to its high oxygen consumption and lipid-rich environment, the brain is particularly vulnerable to oxidative stress or redox imbalances. This susceptibility explains why oxidative stress is associated with various mental disorders, such as depression, anxiety disorders and schizophrenia. In Classical Ayurveda, *Dhi* (intellect), *Dhriti* (possessing information) and *Smriti* (memory) are concerned to have direct relationship with *Manas* (Mind) as the *Karma* or action takes place only because of the mind. When there is disturbance between the factors of '*Manas*' it leads to unsolicited action further leading towards different problems including the psychological or mental disorders [4].

Jara Chikitsa/Rasayana is one of the eight branches of classical Ayurveda which rejuvenates and prevents the effect of ageing and improves the quality of life. Through *Rasayana* therapy, an individual can attain longevity, enhanced memory, improved intellect, freedom from diseases, youthfulness, excellence of luster, complexion, and other benefits [5]. This therapy endows individuals with psychic excellence, such as sharp memory, through rejuvenation. Among the *Rasayana*, *Medhya Rasayanas* are said to have a specific effect on brain and nervous system which are beneficial for *Medha*, responsible for intelligence, and retention in human beings [6]. *Guduchyadi Rasayana* is one among the *Medhya Rasayanas* described in Ayurvedic texts [7].

AIMS AND OBJECTIVES

To establish the efficacy of *Guduchyadi Rasayana* in mental well-being.

MATERIALS AND METHODS

Classical textbooks of Ayurveda which have indications of *Guduchyadi Rasayana* viz., Charaka Samhita, Sushruta Samhita, Astanga Hridaya, Chakradatta, Yoga Ratnakara and Bhaishajya Ratnavali were reviewed to analyze it with its utility. Various databases, including PubMed, Scopus, DHARA, Google Scholar, J-Gate, and Science Direct, were systematically searched using keywords like "*Guduchyadi Rasayana*", "Ageing", and "Mental Well-Being". Boolean operators such as "AND", "OR", and "NOT" were used to refine the search. Filters were applied to include only clinical trials and free full-text articles. Research papers specifically related to *Guduchyadi Rasayana* were then reviewed in detail.

REVIEW OF LITERATURE

Mental Well-Being in Ayurveda

While describing the pathogenesis of different diseases, treatments, *Nidanapanchaka*, all acharyas have uniquely considered the spiritual aspect of *Mana*, *Budhhi*, etc., which indicates its applicability in physiology and medicine as well. The constitution of *Buddhi* is *Trigunatamaka* i.e. *Sattva*, *Rajasa* and *Tamasa* [8]. *Manas Prakriti* (psychic constitution of body) with its 16 varieties has been mentioned by Acharya Sushruta. In Charaka Samhita, the word '*Prajna*' has been used which is synonymous to *buddhi*. *Prajna* is mentioned to be consisting of three types viz., *Dhi*, *Dhriti*, *Smriti* [9]. In Ayurveda, the etiology and symptomatology of many diseases highlight the importance of *Manasika Bhava* viz., *Harsha*, *Priti*, *Dhairya*, *Dhriti*, *Medha*, *Bhaya*, *Shoka*, *Krodha*, *Chinta*, etc. These mental factors not only affect health but also precede formation of several diseases [10].

'*Atattvabhinivesha*' is a psychological disorder, thus is the cause of all worldly miseries, so is also called "*Gada*" [11].

The purpose of *Karya* is equilibrium of *Dhatus*, and it is indicated in the alleviation of disease, overall feeling of healthy or normal status of mind, intellect and sense organs [12].

DRUG REVIEW

Guduchyadi Rasayana

Classical reference says that consumption of *Guduchyadi Rasayana* with *Ghee* makes one capable of memorizing one thousand stanzas only in 3 days. Its ingredients are listed in the Table 1 [13].

Pharmacodynamics of *Guduchyadi Rasayana* and Pharmacokinetics are depicted in the Tables 2 and 3.

The main aim of this review study is to establish the efficacy of *Guduchyadi Rasayana* in mental well-being. For achieving the critical review, the role of *Guduchyadi Rasayana* in well-being was planned. In total, 10 studies have been registered and documented on *Guduchyadi Rasayana* till date. Some of them are carried out with reference to mental disorders whereas few others are done on its effect with reference to other systemic diseases viz., *Amlapitta*, Postmenopausal Syndrome, HTN etc. A structured search was conducted in the following databases: Research Gate, Scopus, PubMed, Google Scholar, and ITRA library, out of which, all the 10 studies done as human trails were reviewed as below:

Table 1. Details of *Guduchyadi Rasayana* Ingredients.

Name of Drug	Botanical Name	Family	Part Used	Ratio
<i>Guduchi</i>	<i>Tinospora cordifolia</i> Linn	Menispermaceae	Stem	1 part
<i>Apamarga</i>	<i>Achyranthus aspera</i> Linn	Amranthaceae	Root	1 part
<i>Vidanga</i>	<i>Emblia ribes</i> Burm. F.	Myrsinaceae	Seeds	1 part
<i>Shankhapushpi</i>	<i>Convolvulus pluricaulis</i> Chois	Convolvulaceae	Herb	1 part
<i>Vacha</i>	<i>Acorus calamus</i> Linn	Araceae	Root	1 part
<i>Haritaki</i>	<i>Terminalia chebula</i> Retz	Combretaceae	Fruit	1 part
<i>Kustha</i>	<i>Saussurea lappa</i> C.B. Clarke	Compositae	Root	1 part
<i>Shatavari</i>	<i>Asparagus racemosus</i> Willd	Liliaceae	Root	1 part

Table 2. Pharmacodynamics of *Guduchyadi Rasayana*.

Ingredient	Rasa	Guna	Virya	Vipaka	Prabhava	Doshagnata
<i>Tinospora cordifolia</i> Linn	Tikta, Kashaya	Guru, Snigdha	Ushna	Madhura	Medhya	Tridosha-shamaka
<i>Achyranthus aspera</i> Linn	Katu, Tikta	Laghu, Ruksha, Tikshna	Ushna	Katu	-	Kaphavata-shamaka, Kaphapitta Samshodhana
<i>Emblia ribes</i> Burm. F.	Katu	Laghu, Ruksha	Ushna	Katu	-	Kaphavata-shamaka
<i>Convolvulus pluricaulis</i> Chois	Kashaya, Katu, Tikta	Snigdha, Pichhila, Guru, Sara	Sheeta	Madhura	Medhya	Tridoshahara
<i>Acorus calamus</i> Linn	Tikta, Katu	Laghu, Tikshna	Ushna	Katu	Medhya	Kaphavata-shamaka, Pittavardhaka
<i>Terminalia chebula</i> Retz	Kashaya Pradhan Lavana varjita Pancharasa	Laghu, Ruksha	Ushna	Madhura	Tridosha-hara	Tridoshahara
<i>Saussurea lappa</i> C.B. Clarke	Tikta, Katu, Madhura	Laghu, Ruksha, Tikshna	Ushna	Katu	-	Vatapitta-shamaka
<i>Asparagus racemosus</i> Willd	Madhura, Tikta	Guru, Snigdha	Sheeta	Madhura	-	Vatapitta-shamaka

Table 3. Pharmacokinetics.

Name of the Drug	<i>Karma</i> (Ayurvedic Aspect of Action)	Pharmacological Actions (Modern Aspect of Action)
<i>Tinospora cordifolia</i> Linn	<i>Rasayana, Medhya, Balya, Vrishya, Raktavardhaka, Kushthagha, Deepana, Pachana, Anulomana, Hridya</i>	Anti-Stress, Antioxidant, Adaptogenic, CNS Depressant, Diuretic, Antitumor
<i>Achyranthus aspera</i> Linn	<i>Shirovirechana, Hridya, Raktavardhaka, Lekhana, Katupaushtika, Deepana, Pachana, Ashmarinashana</i>	Diuretic, Spasmodic, Hypotensive, Hypo-Glycemic, Vasodilator, Cardiac Stimulant
<i>Emblia ribes</i> Burm. F.	<i>Rasayana, Varnya, Nadibalya, Jantughna, Deepana, Pachana, Anulomana</i>	Immuno-Stimulant, Anticancer, Antibiotic, Hepatoprotective, Anti-Tubercular
<i>Convolvulus pluricaulis</i> Chois	<i>Keshya, Medhya, Nadibalya, Deepana, Hridya, Pachana, Anulomana, Vrishya, Prajasthapana, Kushthagha</i>	Antihistamine, Antipyretic, Antiemetic, Central Muscle Relaxant, Hypotensive Spasmodic Tranquilizer, Anti-Inflammatory
<i>Acorus calamus</i> Linn	<i>Medhya, Kanthya, Sangyasthapana, Shulaghna, Deepana, Anulomaka</i>	Sedative, Tranquilizing, Analgesic, CNS Depressant, Anti-Convulsant
<i>Terminalia chebula</i> Retz	<i>Rasayan, Medhya, Chakshushya, Vrishya, Hridya, Nadibalya, Prajasthapana, Deepana, Pachana, Anulomaka</i>	Anti-Stress, Hypolipidaemic, Inhibitory Actions Against HIV-I, Protease
<i>Saussurea lappa</i> C.B. Clarke	<i>Rasayana, Shukrashodhana, Anulomana Akshepashamaka, Raktashodhaka, Varnya, Pachana, Shwasahara</i>	Cardiac Stimulant, Aphrodisiac, Tonic for Brain, Liver and Heart, Sedative, Expectorant
<i>Asparagus racemosus</i> Willd	<i>Rasayana, Medhya, Balya, Shukrala, Chakshushya, Shamaka</i>	Anticancer, Enzymatic, Diuretic, Hypoglycemic, Anti-Oxytoxic

Works on *Guduchyadi Rasayana* in reference to Mental Well-Being

1. A clinical study involving patients with symptoms of dementia demonstrated relief in feelings of anxiety, depression, and sleep disturbances. The intervention's effects were statistically highly significant. It also showed better relief in symptoms according to rating scales (HAM-D and HAM-A), with statistically highly significant results [14].
2. A group of clinically diagnosed patients of anxiety neurosis gave significant relief in breathlessness, chest pain, insomnia, frequent micturition, etc. in one month of administration. The therapy significantly reduced the score of total Hamilton anxiety scale by 85.8% [15].
3. A randomized, placebo-controlled clinical study involving school-going children was conducted to assess the efficacy of *Guduchyadi* syrup in enhancing *Medha* (intellect). The study concluded that the drug had a statistically highly significant effect, and showed a significant percentage of improvement compared to the placebo effect [16].
4. In a random comparative clinical trial involving patients aged between 55 and 75 years, significant relief was observed in symptoms such as forgetting names, memory impairment in recalling special events in life. Additionally, there was significant relief from forgetfulness, losing valuables, etc., and a notable improvement in difficulty recalling information quickly, depression, and inability to relax. With regard to the biochemical parameters viz., Lipid profile, blood urea and AChE highly significant results were found [17].
5. A comparative clinical trial on patients showed highly significant decrease in Negative Emotions like *Krodha, Shoka* and *Chinta* with significant decrease in *Bhaya, Dwesha* and *Moha*. On the other hand, highly significant increase in Positive Emotions *Dhairya, Harsha*, and *Medha* with significant increase in *Dhriti, Virya*, and *Vijnana* [18].
6. In a pharmacognostical and analytical study, ABTS assay revealed that the water extract of the drug having potent anti-oxidant activities. Hence, the antioxidant property of *Guduchyadi Medhya Rasayana* would help to minimize the cognitive decline [19, 20]. Summary of clinical trials on mental health articles is depicted in Table 4.

Table 4. Comparative Summary of clinical trial on Mental Health Articles.

S.N.	Type of study	Sample size	Inclusion criteria	p-value	Significance	Scales used for assessment
1.	Clinical study	73 patients	Dementia, feeling of anxiety, depression and sleep disturbance	p<0.001	Statistically highly significant	Rating scales (Hamilton A and D)
2.	Clinical study	8 patients	anxiety neurosis, breathlessness, chest pain, insomnia, frequent micturition, tremors, aches, irritability, exhaustion, nervousness, inability to relax, lack of concentration	Reduced the score of total Hamilton anxiety scale by 85.8%. p<0.001	statistically highly significant	Hamilton anxiety scale
3.	A randomized placebo controlled clinical study	65 children	Enhancement of <i>Medha</i> IQ assessment	p<0.001	Statistically highly significant	Malin's Intelligence Scale for Indian Children-MISIC
4.	Clinical study	138 patients, 55-75 years	Names forgotten, numbers forgotten, and memory impairment in recalling special events in life	p<0.001	Statistically highly significant	Lipid profile, blood urea, serum Acetylcholine Esterase (AChE)
5.	Comparative Clinical study	30 patients	Sign and symptoms of premature ageing (<i>Vali</i> , <i>Grahanahani</i> , <i>Dharanahani</i> and <i>Utsahahani</i>)	p<0.001	statistically highly significant	(HAM-D and HAM-A, Brief Psychiatric Rating Scale)
6.	Pharmacognostical and analytical study	-	-	-	Potent anti-oxidant activities with percentage inhibitions of IC ₅₀ 101.8±7.0 µ/ml	Microscopic and physio-chemical parameters, ABTS assay

Works on *Guduchyadi Rasayana* in Reference to other Systemic Diseases

1. In a randomized controlled trial involving diagnosed patients with Postmenopausal Syndrome, the intervention showed extremely significant improvements in insomnia, headache, etc. The study also revealed significant results in serum calcium, RBS, etc. [21].
2. Pharmaceuticoanalytical study carried out in *Guduchyadi Avaleha* for the treatment of stuttering (*Gadgada*) showed the data of its value of loss on drying at 105°C (5.83%), Total ash value (4.23%), Acid insoluble ash (0.5%), Water soluble extractive (43.82%) and pH value (6.2) [22].
3. In a randomized controlled comparative clinical trial involving 40 hypertensive patients, both groups experienced benefits in reducing high blood pressure. The intervention was especially effective in lowering systolic blood pressure in stage I hypertension, with a p-value of 0.044 upon comparison between the groups [23].
4. In elderly healthy persons the overall *Rasayana* effect and clinical safety of *Guduchyadi Rasayana* was established [24]. Some effects of *Guduchyadi Rasayana* on systemic diseases are depicted in Table 5.

Table 5. Effect of *Guduchyadi Rasayana* on systemic diseases.

S.N.	Type of study	Sample size	Inclusion criteria	p-value	Significance	Scales used for assessment
1.	Clinical study	30 female patients	Insomnia, headache, arthralgia, myalgia, palpitation, and nervousness in Postmenopausal Syndrome	p<0.0001	Statistically highly significant	Serum calcium, RBS, and TLC levels
2.	Clinical study	40 patients	Stage-1 and Stage-2 Hypertension without any underlying complications	p<0.044	Statistically significant	Measurement of BP using Sphygmomanometer in sitting, standing and supine position
3.	A randomized placebo controlled clinical study	15 healthy individuals	Individuals not suffering from any severe illness	p<0.001	statistically highly significant	Hb gm%, blood pressure, walk capacity, foot thrust, etc.
4.	Pharmaceutico analytical study	-	Treatment of stuttering (<i>Gadgada</i>)	value of loss on drying at 105°C (5.83%), Total ash value (4.23%)	Physicochemical parameters were found to be within the parameters as per API	Loss on drying at, Total ash value, Acid insoluble ash, Water soluble extractive and pH value

RESULT AND DISCUSSION

In Ayurveda, *Medhya Rasayana* promotes intelligence, cognitive ability and overall status of mental health. *Guduchyadi Rasayana* therapy played an import role in overcoming anxiety, depression and provided significant relief on Brief Psychiatric Rating Scale, Hamilton Anxiety and Hamilton Depression Rating Scale in dementia [25]. To a greater extent, *Medhya Rasayan*s are special Ayurvedic neuro-nutraceutical drugs which promote cognitive function of the brain as related to brain ageing [26]. It can prevent oxidative stress, which is manifested by stress induced free radical damage through its Antioxidant and Adaptogenic properties [27]. Significant relief in symptoms such forgetfulness, impaired recognition, memory impairment and inability to relax are noted. Significant decreases were observed in serum cholesterol, triglyceride, low-density lipoprotein (LDL), and very low-density lipoprotein (VLDL) levels, as well as reductions in blood urea and serum acetylcholinesterase (AChE) levels, regarding biochemical parameters. Additionally, there a highly significant increase in high-density lipoprotein (HDL) levels was established. *Guduchyadi Rasayana* has highly significant effect on Negative Emotions like *Krodha*, *Shoka*, *Chinta*, *Bhaya*, *Dwesa* and *Moha*. On the other hand, highly significant increase was observed on Positive Emotions like *Dhairya*, *Harsha*, *Priti*, *Medha*, *Dhriti* and *Vijnana* on Disturbed *Manasika Bhava* [28]. In Anxiety Neurosis (*atattvabhinivesha*) significant relief in insomnia, headaches, exhaustion, nervousness, inability to relax, lack of concentration and in palpitation is established [29]. The drug has great significance on enhancing *Medha* and highly significant effect on *Smriti*, Verbal IQ, Performance and Total IQ. The main action of the drug is at the level of *Sadhaka Pitta* which influences the *Buddhi* and *Medha*. It also possesses *Agnivardhaka*, *Dhatuposhaka* and *Srotoshodhaka* properties [30]. Pharmaceutical analysis showed the data of its value of loss on drying at 105°C (5.83%), Total ash value (4.23%), Acid insoluble ash (0.5%), Water soluble extractive (43.82%) and pH value (6.2) [31].

The overall effect of *Guduchyadi Rasayana* in other systemic disorders shows that it has anti-hypertensive activities [32], specifically effective in stage 1 HTN [33]. It is known for its higher concentration of chromium, which plays a significant role in reducing sucrose-induced blood pressure elevations and acts as an antioxidant [34]. The anti-stress, analgesic, and anti-inflammatory effects of

Guduchi; the sedative effects of *Shankhapushpi*; the tranquilizer and sedative effects of *Vacha*; and the anti-stress effects of *Haritaki* provide significant relief in postmenopausal syndrome. *Guduchyadi Rasayana* also helps in relieving symptoms viz., insomnia, headache, arthralgia, myalgia, palpitation and nervousness [35, 36].

CONCLUSION

All the drugs comprising *Guduchyadi Rasayana* help enhance *Sattva Guna*. *Guduchyadi Rasayana* through its *Medhya Prabhava* can counteract the main etiological factor, Stress and disturbed *Manasika Bhava* because of its ingredients possessing neuro pharmacological actions such as enhancement of memory, cognition and overall status of mental health and has anti-stress, anxiolytic, antidepressant, nootropic, tranquilizing, sedative and anti-oxidative properties.

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