



Review Article

PROBABLE MODE OF ACTION OF *KALYANAKA GHRITA* IN *UNMADA* (INSANITY) BASED ON ANALYSIS OF *RASA PANCHAKA* OF INGREDIENTS- A REVIEW

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ABSTRACT

Aim: This review article is an attempt to analyse the probable mode of action of *Kalyanaka ghrita* in psychiatric conditions. **Background:** *Unmada* is a term that represents broad classes of mental ailments in Ayurvedic literature. Mental disorders impose an enormous burden on society, accounting for almost one in three years lived with disability globally. According to the WHO, every year, almost one million people die from suicide; a "global" mortality rate of 16 per 1,00,000 or one death every 40 seconds. *Kalyanaka ghrita* is a time tested and clinically proven polyherbal formulation which is widely and effectively used by Ayurvedic physicians in the management of psychiatric conditions. **Results:** While analysing the Rasapanchaka (Ayurvedic Principles of Drug-Action), it is found that of the 28 ingredients, 15 drugs are having *Tikta rasa*, 22 with *Laghu guna*, 19 with *Ushna veerya* and 18 with *Katu vipaka*. Considering *Doshaharatwa*, 12 drugs are *Kaphapittahara*. All these properties are against *Kapha dosha*. **Conclusion:** *Kalyanaka ghrita* may be more effective in the management of *Kaphaja unmada*, among all the 6 varieties of *Unmada*. **Clinical Significance:** Analysis of mode of action leads us to the inference that *Kalyanaka ghrita* may be more effective in the management of *Kaphaja unmada*, characterized by slow or weak voice and body movements, anorexia, desire for women (sex) and solitude, excessive sleep, vomiting, dribbling of saliva, symptoms pronounced just after intake of food, whitish discoloration of nails constitute *Kaphaja unmada*, a classical example being depression.

KEYWORDS: Mode of action, *Kalyanaka Ghrita*, *Unmada*, Insanity, Others.

INTRODUCTION

Unmada is a term that represents broad classes of mental ailments in Ayurvedic literature. *Unmada* is explained in Ayurveda as the derangement in *Manas* (mental functioning), *Budhi* (application of the acquired knowledge), *Samjna* (perceptions), *Jnana* (experiences), *Smriti* (memory), *Bhakti* (emotional adhesions), *Seela* (conditioned activities), *Cheshta* (behavior) and *Achara* (socio cultural activities)¹.

Mental disorders impose an enormous burden on society, accounting for almost one in three years lived with disability globally. 80% of the people likely to experience an episode of a mental disorder in their lifetime. Two of the most common forms of mental disorders are anxiety and depression². Nearly 80% of people with mental disorders live in low- and middle-income countries, which account for more than 10% of total burden of disease in these countries³. Among the several causes of YLD (years lived with disability), depression is leading as the second cause. Anxiety disorders, schizophrenia,

bipolar disorders, prescription drug overuse, headache, other substances abuse, Alzheimer's disease, alcohol use disorders, and epilepsy are global neuropsychiatric causes of YLD.⁴

It is obvious that psychiatric illnesses are often disabling, and this is reflected in the markedly higher proportion of overall disease burden caused by the mental illnesses. It is of importance to note, untreated mental illnesses also cause mortality due to suicide. Worldwide, suicide is a major cause for concern. According to the WHO, every year, almost one million people die from suicide; a "global" mortality rate of 16 per 1,00,000 or one death every 40 seconds. In the last 45 years, suicide rates have increased by 60% worldwide. Suicide is among the three leading causes of death among those aged 15-44 years in some countries, and the second leading cause of death in the 10-24 years age group. These figures do not include suicide attempts which are up to 20 times more frequent than completed suicide. Suicide worldwide is estimated to represent 1.8% of

the total global burden of disease in 1998 and projected to reach 2.4% of total burden of disease in countries with market and former socialist economies in 2020.⁵

Kalyanaka ghrita is a time tested and clinically proven⁶ polyherbal formulation which is widely and effectively used by Ayurvedic physicians in the management of a wide array of disorders. It is found to be beneficial in personality disorders, curing insanity, cough, epilepsy, anaemia, itching, poison, consumption, delusion, Diabetes mellitus, artificial poison, fever, scanty semen volume, infertility, those having poor intelligentia, stammering speech, who desire good memory, who have poor digestive power. It bestows strength, auspiciousness, long life, complexion, fortune and nourishment. However, it is more widely used in the management of psychiatric conditions. This review article is an attempt to analyse the probable mode of action of *Kalyanaka ghrita* in psychiatric conditions.

Materials and methods

Data was collected by thorough literature review of Samhitas (classical texts), Nighantus (lexicons) and published research articles.

Aetiopathogenesis of Unmada: *Unmada* is a term that represents broad classes of mental ailments in Ayurvedic literature.

Doshas which have undergone increase and traversing upwards through the channels of mind (*Manovaha srotas*) get localized in the mind and cause its abnormality. This disease is called *Unmada*, it is mainly a disease of the mind.

Varieties: There are six varieties. One from each *Dosha* (*Vataja*, *Pittaja*, *Kaphaja*), fourth from a combination of all the three (*Sannipataja*), fifth from grief etc (*Aadhija*), sixth from poisons (*Vishaja*).

Cause: Indulgence in foods which are incompatible, spoiled and unclean, showing disrespect to gods, preceptors (elders) or Brahmins, emotions affecting the mind like fear, joy etc and violent physical activities

Pathogenesis: In persons who are mentally weak, doshas which have undergone increase invade hridaya (seat of mind), get lodged in channels of the mind and bring about the derangement of mind quickly.

General symptoms: Improper understanding, unsteadiness of mind, non coordination of sight, feeling of fear, irrelevant talk, feeling of emptiness of heart

Symptoms of Vataja unmada: Laughing, smiling, dancing, singing, speaking, making movement of body parts and weeping at improper time and place, hardness/ roughness, emaciation, blackish red

discoloration of the body, exacerbation of symptoms after digestion of food

Symptoms of Pittaja unmada: Intolerance, uncontrollability, casting away the clothes and remaining naked, threatening others, running away, feeling of burning sensation, desiring shades, cool water and food, yellowish discoloration of the body

Symptoms of Kaphaja unmada: Slow or weak voice and body movements, anorexia, desire for women (sex) and solitude, excessive sleep, vomiting, dribbling of saliva, symptoms pronounced just after intake of food, whitish discoloration of nails.

Symptoms of Sannipataja unmada: There will be symptoms produced due to each *Dosha*. Its treatment is very difficult.

Symptoms of Adhija unmada: Person talks indifferently, reveals secret, sings, laughs or weeps on his own accord and behave senselessly.

Symptoms of Vishaja unmada: Patient will have red eyes, loss of strength of body, sense and complexion, helplessness, black discoloration of the face or mouth and loss of consciousness.⁷

Mental disorders: Key facts⁸

- There are many different mental disorders, with different presentations. They are generally characterized by a combination of abnormal thoughts, perceptions, emotions, behaviour and relationships with others.
- Mental disorders include: depression, bipolar affective disorder, schizophrenia and other psychoses, dementia, intellectual disabilities and developmental disorders including autism.
- There are effective strategies for preventing mental disorders such as depression.
- There are effective treatments for mental disorders and ways to alleviate the suffering caused by them.
- Access to health care and social services capable of providing treatment and social support is key.

The burden of mental disorders continues to grow with significant impacts on health and major social, human rights and economic consequences in all countries of the world. Let us analyse them.

Depression

Depression is a common mental disorder and one of the main causes of disability worldwide. Globally, an estimated 300 million people are affected by depression. More women are affected than men.

Depression is characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, tiredness, and poor concentration. People with depression may also have multiple physical complaints with no apparent

physical cause. Depression can be long-lasting or recurrent, substantially impairing people's ability to function at work or school and to cope with daily life. At its most severe, depression can lead to suicide.

Prevention programmes have been shown to reduce depression, both for children (e.g. through protection and psychological support following physical and sexual abuse) and adults (e.g. through psychosocial assistance after disasters and conflicts).

There are also effective treatments. Mild to moderate depression can be effectively treated with talking therapies, such as cognitive behaviour therapy or psychotherapy. Antidepressants can be an effective form of treatment for moderate to severe depression but are not the first line of treatment for cases of mild depression. They should not be used for treating depression in children and are not the first line of treatment in adolescents, among whom they should be used with caution.

Management of depression should include psychosocial aspects, including identifying stress factors, such as financial problems, difficulties at work or physical or mental abuse, and sources of support, such as family members and friends. The maintenance or reactivation of social networks and social activities is important.

Bipolar affective disorder

This disorder affects about 60 million people worldwide. It typically consists of both manic and depressive episodes separated by periods of normal mood. Manic episodes involve elevated or irritable mood, over-activity, pressure of speech, inflated self-esteem and a decreased need for sleep. People who have manic attacks but do not experience depressive episodes are also classified as having bipolar disorder.

Effective treatments are available for the treatment of the acute phase of bipolar disorder and the prevention of relapse. These are medicines that stabilize mood. Psychosocial support is an important component of treatment.

Schizophrenia and other psychoses

Schizophrenia is a severe mental disorder, affecting about 23 million people worldwide. Psychoses, including schizophrenia, are characterized by distortions in thinking, perception, emotions, language, sense of self and behaviour. Common psychotic experiences include hallucinations (hearing, seeing or feeling things that are not there) and delusions (fixed false beliefs or suspicions that are firmly held even when there is evidence to the contrary). The disorder can make it difficult for people affected to work or study normally.

Stigma and discrimination can result in a lack of access to health and social services. Furthermore, people with psychosis are at high risk of exposure to human rights violations, such as long-term confinement in institutions.

Schizophrenia typically begins in late adolescence or early adulthood. Treatment with medicines and psychosocial support is effective. With appropriate treatment and social support, affected people can lead a productive life, be integrated in society. Facilitation of assisted living, supported housing and supported employment can act as a base from which people with severe mental disorders, including Schizophrenia, can achieve numerous recovery goals as they often face difficulty in obtaining or retaining normal employment or housing opportunities.

Dementia

Worldwide, approximately 50 million people have dementia. Dementia is usually of a chronic or progressive nature in which there is deterioration in cognitive function (i.e. the ability to process thought) beyond what might be expected from normal ageing. It affects memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgment. The impairment in cognitive function is commonly accompanied, and occasionally preceded, by deterioration in emotional control, social behaviour, or motivation.

Dementia is caused by a variety of diseases and injuries that affect the brain, such as Alzheimer's disease or stroke.

Though there is no treatment currently available to cure dementia or to alter its progressive course, many treatments are in various stages of clinical trials. Much can be done, however, to support and improve the lives of people with dementia and their carers and families.

Developmental disorders, including autism

Developmental disorder is an umbrella term covering intellectual disability and pervasive developmental disorders including autism. Developmental disorders usually have a childhood onset but tend to persist into adulthood, causing impairment or delay in functions related to the central nervous system maturation. They generally follow a steady course rather than the periods of remissions and relapses that characterize many other mental disorders.

Intellectual disability is characterized by impairment of skills across multiple developmental areas such as cognitive functioning and adaptive behaviour. Lower intelligence diminishes the ability to adapt to the daily demands of life.

Symptoms of pervasive developmental disorders, such as autism, include impaired social behaviour, communication and language, and a narrow range of interests and activities that are both unique to the individual and are carried out repetitively. Developmental disorders often originate in infancy or early childhood. People with these disorders occasionally display some degree of intellectual disability.

Family involvement in care of people with developmental disorders is very important. Knowing what causes affected people both distress and wellbeing is an important element of care, as is finding out what environments are most conducive to better learning. Structure to daily routines help prevent unnecessary stress, with regular times for eating, playing, learning, being with others, and sleeping. Regular follow up by health services of both children and adults with developmental disorders is needed. The community at large has a role to play in respecting the rights and needs of people with disabilities.

Kalyanaka ghrta⁹

Let us analyse the ingredients and indications of *Kalyanaka ghrta*, which is a widely used classical formulation to treat *Unmada*.

Ingredients of Preparation: Medicated ghee is prepared with the decoction and paste of each of *Vara* (*Terminalia chebula* Retz., *Emblia officinalis* Gaertn., *Terminalia bellirica* (Gaertn.) Roxb.), *Vishala* (*Citrullus colocynthis* (L.) Schrad), *Bhadraila* (*Amomum subulatum* Roxb.), *Devadaru* (*Cedrus*

deodara (Roxb. ex D.Don) G.Don), *Elavaluka* (*Prunus cerasus* Linn.), two *Sariva* (*Hemidesmus indicus* (L.) R.Br.exSchult. and *Cryptolepis dubia* (Burm.f.) M.R. Almeida), two *Rajani* (*Curcuma longa* L and *Coscinium fenestratum* (Goetgh.) Colebr.), two *Sthira* [*Uraria picta* (Jacq.) DC and *Pseudarthria viscida* (L.) Wight & Arn.], *Phalini* (*Callicarpa macrophylla* Vahl), *Nata* (*Valeriana wallichii* DC), *Brihati* (*Solanum indicum* L), *Kushtha* (*Saussurea costus* (Falc.) Lipsch.), *Manjishtha* (*Rubia cordifolia* L.), *Nagakesara* (*Mesua ferrea* L.), *Dadima* (*Punica granatum* L.), *Vella* (*Embelia ribes* Burm.f.), *Talisapatra* (*Abies spectabilis* (D.Don) Mirb.), *Ela* (*Elettaria cardamomum* (L.) Maton), *Malatimukula* (*Jasminum sambac* (L.) Aiton), *Utpala* (*Nymphaea nouchali* Burm.f.), *Danti* (*Baliospermum solanifolium* (Burm.) Suresh), *Padmaka* (*Prunus cerasoides* Buch.-Ham. ex D.Don), *Hima* (*Santalum album* L) and ghee.

Indications

It is said to be beneficial in personality disorders, curing insanity, cough, epilepsy, diseases caused by sinful deeds, anaemia, itching, poison, consumption, delusion, Diabetes mellitus, artificial poison, fever, scanty semen volume, infertility, in whom the mind is affected by gods, those having poor intelligentia, stammering speech, who desire good memory, who have poor digestive power. It bestows strength, auspiciousness, long life, complexion, fortune and nourishment. This is best for *Pumsavana* (treatment modality to get male progeny).

Analysis of *Rasapanchaka* of *Kalyanaka ghrta* (Table1):

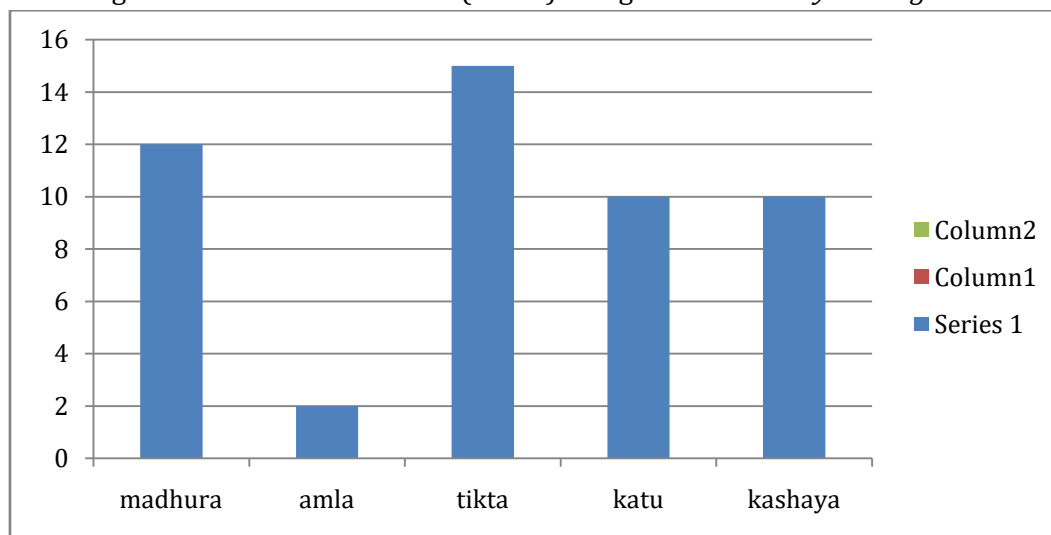
Table 1. Pharmacological properties of herbal ingredients

S. No.	Drug (Sanskrit name)	Rasa	Guna	Virya	Vipaka	Karma
1	<i>Haritaki</i> ¹⁰	<i>Madhura, Amla, Katu, Tikta, Kashaya</i>	<i>Laghu, Ruksha Sara</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Deepani, Medhya, Rasayana, Brimhani, Anulomani, Tridosahara</i>
2	<i>Amalaki</i> ¹¹	<i>Madhura, Amla, Katu, Tikta, Kashaya</i>	<i>Laghu, Ruksha Sara</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Rasayana Tridosahara</i>
3	<i>Vibhitaki</i> ¹²	<i>Kashaya</i>	<i>Laghu Ruksha, Sara</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Kaphapittahara</i>
4	<i>Vishala</i> ¹³	<i>Tikta</i>	<i>Laghu Sara</i>	<i>Ushna</i>	<i>Katu</i>	<i>Pitta kapha hara</i>
5	<i>Bhadraila</i> ¹⁴	<i>Katu</i>	<i>Laghu Ushna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Deepana Kapha pitta hara</i>
6	<i>Devadaru</i> ¹⁵	<i>Tikta</i>	<i>Laghu Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha pitta hara</i>
7	<i>Elavaluka</i> ¹⁶	<i>Kashaya</i>	<i>Laghu</i>	<i>Seetha</i>	<i>katu</i>	<i>Kapha pitta hara</i>
8	<i>Sariba</i> ¹⁷	<i>Madhura</i>	<i>Snigdha guru</i>	<i>Seetha</i>	<i>Madhura</i>	<i>Deepana, Tridosahara</i>

9	<i>Krishna Sariba</i>	<i>Madhura</i>	<i>Snigdha guru</i>	<i>Seetha</i>	<i>Madhura</i>	<i>Deepana, Tridosahara</i>
10	<i>Haridra</i> ¹⁸	<i>Katu tikta</i>	<i>Laghu Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha pitta hara</i>
11	<i>Daruharidra</i> ¹⁹	<i>Katu tikta</i>	<i>Laghu Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha pitta hara</i>
12	<i>Prishniparni</i> ²⁰	<i>Madhura</i>	<i>Laghu Sara</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridosahara</i>
13	<i>Shalaparni</i> ²¹	<i>Tikta Madhura</i>	<i>Guru</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridosahara, Rasayana, Brimhana</i>
14	<i>Priyangu</i> ²²	<i>Tikta kashaya</i>	<i>Guru Ruksha</i>	<i>Seetha</i>	<i>Katu</i>	<i>Vatapittahara, Bhranti, Moha</i>
15	<i>Nata</i> ²³	<i>Madhura</i>	<i>Laghu Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridosahara</i>
16	<i>Brihati</i> ²⁴	<i>Katu tikta</i>	<i>Laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha vatahara</i>
17	<i>Kushta</i> ²⁵	<i>Katu madhura tikta</i>	<i>Laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vatakaphahara</i>
18	<i>Manjishta</i> ²⁶	<i>Madhura tikta kashaya</i>	<i>guru</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapharaktahara</i>
19	<i>Nagakesara</i> ²⁷	<i>Kashaya</i>	<i>Laghu ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphapitta hara</i>
20	<i>Dadima</i> ²⁸	<i>Madhura kashaya</i>	<i>Laghu snigdha</i>	<i>Ushna</i>	<i>Amla</i>	<i>Tridosahara, Tarpana, Medhavaham</i>
21	<i>Vella</i> ²⁹	<i>Katu</i>	<i>Teekshna ruksha laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Deepana, Kapha vata hara</i>
22	<i>Talisapatra</i> ³⁰	<i>Tikta madhura</i>	<i>Laghu teekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha vata hara, Deepana</i>
23	<i>Ela</i> ³¹	<i>Katu</i>	<i>laghu</i>	<i>Seetha</i>	<i>Madhura</i>	<i>Vata hara</i>
24	<i>Malatimukula</i> ³²	<i>Tikta kashaya</i>	<i>laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Anila rakta hara</i>
25	<i>Utpala</i> ³³	<i>Madhura</i>	<i>Guru ruksha</i>	<i>Seetha</i>	<i>Madhura</i>	<i>Kaphapittahara</i>
26	<i>Danti</i> ³⁴	<i>Katu</i>	<i>Laghu Sara teekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Deepan, Pittakaphahara</i>
27	<i>Padmaka</i> ³⁵	<i>Kashaya tikta</i>	<i>laghu</i>	<i>Seetha</i>	<i>Katu</i>	<i>Kapha pitta hara</i>
28	<i>Hima</i> ³⁶	<i>Tikta</i>	<i>Ruksha laghu</i>	<i>Seetha</i>	<i>Katu</i>	<i>Kapha pitta hara</i>

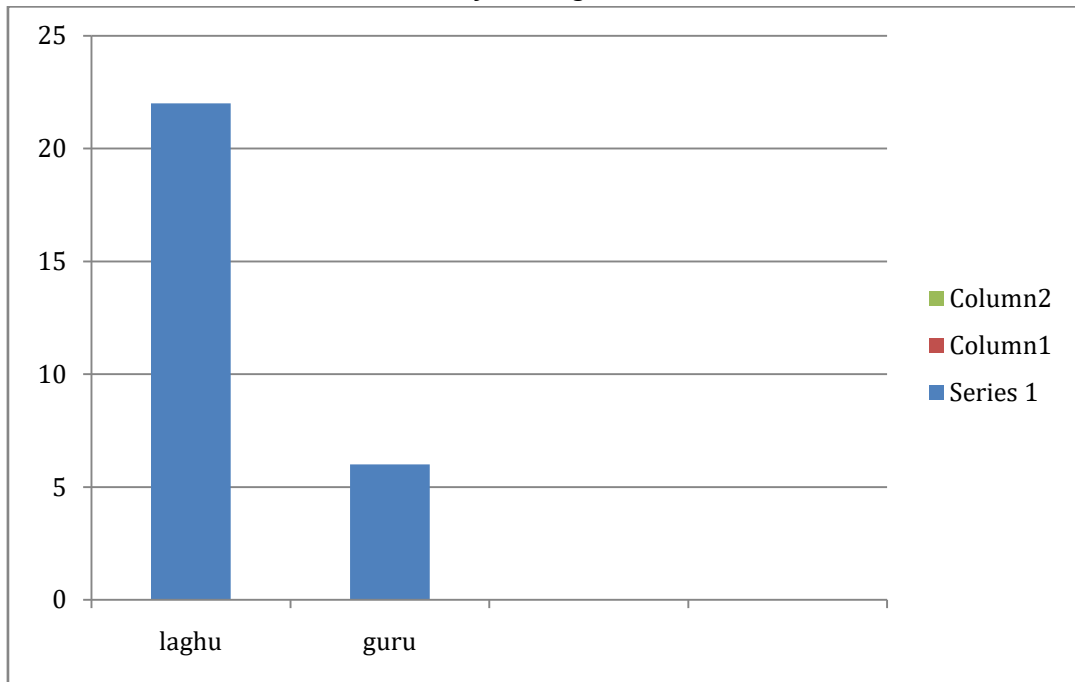
Rasa (taste): 15 drugs are having *Tikta rasa* (bitter taste), 12 having *Madhura rasa* (sweet taste), 10 each with *Katu* (pungent) and *Kashaya rasa* (astringent tastes) and 2 with *Amla rasa* (sour tastes) [Graph.1]

Fig 1: Distribution of six *Rasa* (tastes) in ingredients of *Kalyanaka ghrita*



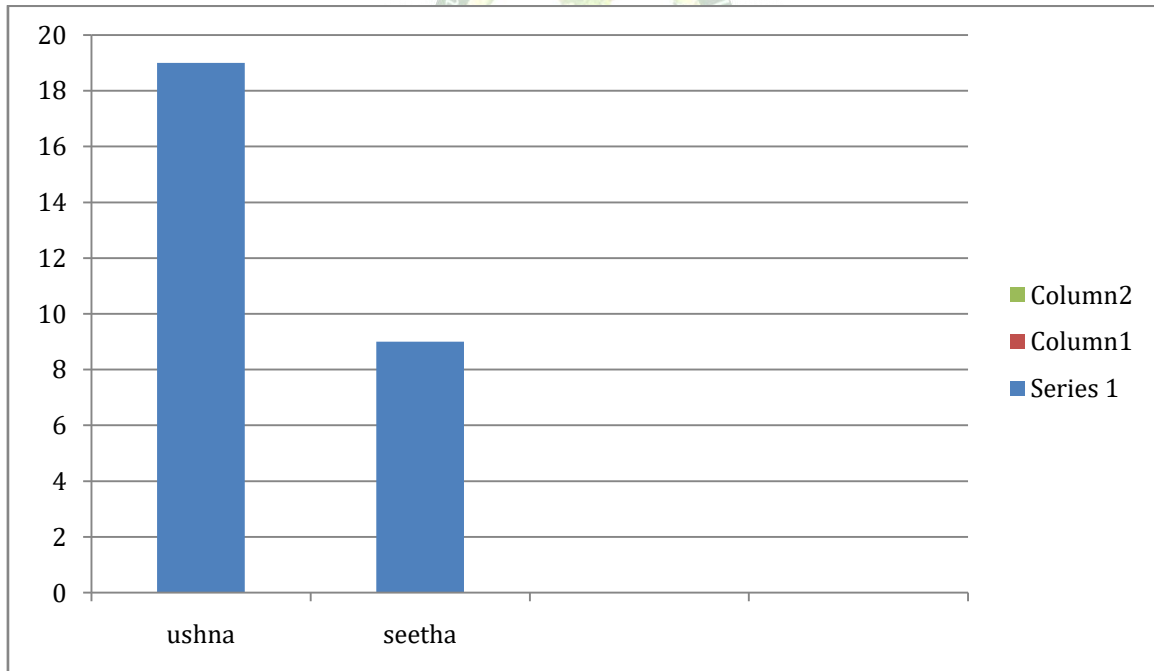
Guna (property): 22 drugs are *Laghu* (easy to digest) and 8 are *Guru* (difficult to digest) [Graph.2].

Fig 2: Distribution of *Laghu* (easy to digest) and *Guru* *Guna* (difficult to digest properties) in ingredients of *Kalyanaka ghrita*



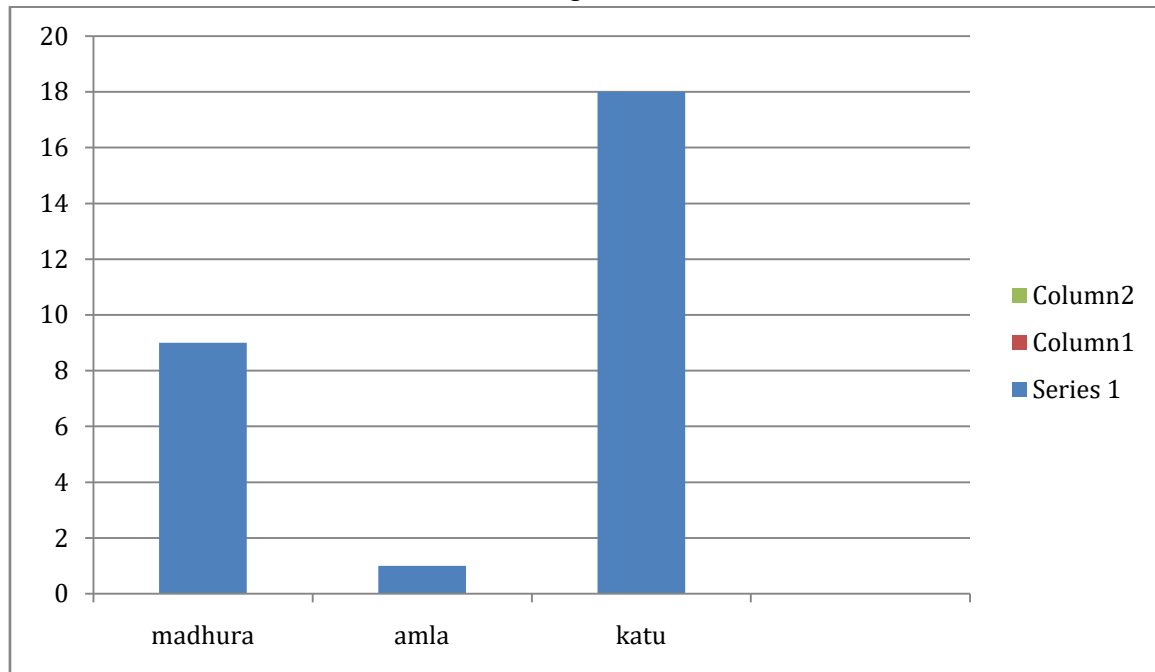
Veerya (potency): 19 drugs are having *Ushna veerya* (hot potency) and 9 drugs are having *Seetha veerya* (cold potency) [Graph.3]

Fig 3: Distribution of *Ushna* (hot) and *Seetha veerya* (cold potencies) in ingredients of *Kalyanaka ghrita*



Vipaka (bio-transformative phase of rasa): 18 drugs are having *Katu* (pungent), 9 drugs are having *Madhura* (sweet) and 1 drug is having *Amla* (sour) *Vipaka* [Graph.4]

Fig 4: Distribution of *Madhura* (sweet), *Amla* (sour) and *Katu* (pungent) *Vipaka* in ingredients of *Kalyanaka ghrita*



Karma: 12 drugs are *Kaphapittahara* (alleviating *Kapha* and *Pitta*), 8 drugs are *Tridosahara* (alleviating *Vata*, *Kapha* and *Pitta*), 4 drugs are *Kaphavatahara* (alleviating *Kapha* and *Vata*), 1 each are *Kapharaktahara* (alleviating *Kapha* and *Rakta*), *Vatahara* (alleviating *Vata*), *Vataraktahara* (alleviating *Vata* and *Rakta*), *Vatapittahara* (alleviating *Vata* and *Pitta*).

Apart from this, *Haritaki* is *Deepani* (improves appetite), *Medhya* (promoting intellect), *Rasayana* (increases quality of *Dhatu*s) and *Brimhani* (nourishing). *Amalaki* is *Rasayana*, *Shalaparni* is *Rasayana* and *Brimhana*, *Sariba*, *Krishna Sariba* and *Bhadraila* is *Deepana*, *Dadima* is *Brimhani* and *Medhya*. *Priyangu* is the only drug said to be indicated in *Bhranti* (Insanity), *Moha* (delusion) in this formulation.

Research

Anti oxidant property has been scientifically proven in most of the drugs (20 out of 28 ingredients), via. *Emblica officinalis*³⁷, *Terminalia belerica*³⁸, *Citrullus colocynthis* (L.) Schrad.³⁹, *Amomum subulatum* Roxb⁴⁰, *Cedrus deodara* (Roxb. ex D.Don) G.Don⁴¹, *Prunus cerasus* Linn⁴², *Hemidesmus indicus* (L.)R.Br.ex Schult⁴³, *Cryptolepis dubia* (Burm.f.) M.R.Almeida⁴⁴, *Curcuma longa* L⁴⁵, *Coscinium fenestratum* (Goetgh.) Colebr.)⁴⁶, *Pseudarthria viscid*⁴⁷, *Callicarpa macrophylla*⁴⁸, *Valeriana wallichii*⁴⁹, *Saussurea lappa*⁵⁰, *Rubia cordifolia*⁵¹, *Punica granatum*⁵², *Elettaria cardamomum*⁵³, *Jasminum sambac*⁵⁴, *Nymphaea nouchali*⁵⁵, *Santalum album*.⁵⁶

Apart from this, many drugs are scientifically proved in insanity or conditions of the brain which are very close to it like, *Terminalia chebula* in Alzheimer's disease⁵⁷, *Emblica officinalis* in insanity⁵⁸, *Cedrus deodara* (Roxb. ex D.Don) G.Don as anxiolytic, neuroleptic and anticonvulsant⁴¹, (*Prunus cerasus* L.) modulate cerebral blood flow⁵⁹, *Curcuma longa* L in major depression⁴⁵, *Pseudarthria viscida* as neuroprotective⁶⁰, *Valeriana wallichii* as anti depressant⁶¹, improves sleep⁶² and neuro-protective⁶³, *Rubia cordifolia* as having anti stress and nootropic action⁶⁴, *Punica granatum* as Antidepressant and having Anti-Anxiety Effect⁶⁵, *Embelia ribes* having antidepressant-like activity⁶⁶, *Elettaria cardamomum* having Antidepressant and Anti-Anxiety Effect^{53,67}, *Jasminum sambac* having anti stress effect⁶⁸ and *Santalum album* is sedative and neuro protective.^{56,69}

Discussion and results

Unmada is a broad term that represents broad classes of mental ailments in Ayurvedic literature. There are many different mental disorders, with different presentations. They are generally characterized by a combination of abnormal thoughts, perceptions, emotions, behaviour and relationships with others. Mental disorders impose an enormous burden on society, accounting for almost one in three years lived with disability globally. 80% of the people likely to experience an episode of a mental disorder in their lifetime. It is of importance to note, untreated mental illnesses also cause mortality due to suicide. Worldwide, suicide is a major cause for concern. According to the WHO,

every year, almost one million people die from suicide; a "global" mortality rate of 16 per 1,00,000 or one death every 40 seconds.

Kalyanaka ghrita is a widely used polyherbal formulation used in the management of mental disorders in Ayurveda. This review article is an attempt to analyse the probable mode of action of *Kalyanaka ghrita* in psychiatric conditions. While analysing the *Rasapanchaka* (Ayurvedic Principles of Drug-Action), it is found that of the 28 ingredients, 15 drugs are having *Tikta rasa*, 22 with *Laghu guna*, 19 with *Ushna veerya* and 18 with *Katu vipaka*. Considering *Doshaharatwa*, 12 drugs are *Kapha-pittahara*. All these properties are against *Kapha dosha*. So, *Kalyanaka ghrita* may be more effective in the management of *Kaphaja unmada*. Psychological diseases characterised by slow or weak voice and body movements, anorexia, desire for women (sex) and solitude, excessive sleep, vomiting, dribbling of saliva, symptoms pronounced just after intake of food, whitish discoloration of nails constitute *Kaphaja unmada*, a classical example being depression.

Haritaki, Sarivadaya, Ela, have Deepana, and Amadoshanashak properties so that it regulates *Jatharagni, Dhatvagni* and *Bhutagni* which corrects metabolism at cellular level, results in proper formation of *Dhatus* and *Upadhatus* and *Strotoshodhan* by removing *Ama*. *Haritaki, Amalaki, Vibhitaki, Visala, Danti* has *Sara Guna* and *Virechak* action so that they regulate *Doshas* by *Samshodhana karma*. Thus *Samshodhana karma* clears the *Strotas* and regulates function of *Tridosha*.

Antioxidant supplement therapy as an adjuvant therapy is useful in patients with stress-induced psychiatric disorders.⁷⁰ It is well documented that antioxidants can remove the reactive oxygen species (ROS) and reactive nitrogen species (RNS) through scavenging radicals and suppressing the OS pathway, which further protect against neuronal damage caused oxidative or nitrosative stress sources in the brain, hopefully resulting in remission of depression or anxiety symptoms⁷¹. Thus the anti oxidant property of most of the ingredients also will be contributing to the action of the formulation in psychiatric illnesses.

Role of Ghrita

Among all the *Snigdha* (unctuous) substances, *Ghrita* is considered as best in Ayurveda⁷². It is one of the *Nitya Rasayanas* (can be consumed daily) mentioned in Ayurveda.⁷³ It is sweet in taste, provide unctuousness and softness to the body tissues and cold in potency. The properties of *Ghrita* are to alleviate *Vata* and *Pitta* without increasing *Kapha* much. It improves the digestive fire, improves

eyesight, intelligence, memory, vitalizes the body and gives luster. It improves semen and *Ojus*- the ultimate product of metabolism of food. *Ghrita* is known best for treating poisoning, insanity, seizures, pain, fever. It is said to provide auspiciousness and protection⁷⁴. The most peculiar property of *Ghrita* is that it imbibes the property of the drug added to it providing a synergetic action in combination.⁷⁵

The most important cause of *Unmada* is described as *Heena satwa* (timid personality) of an individual. They will be mentally weak. Their *Ojas* will be affected. This depletion can be compensated by *Ghrita*. Inauspicious things like disrespecting elders are one cause of *Unmada*. *Ghrita* has the property of destroying inauspiciousness and giving protection. *Vata dosha* is the controller of the mind⁷⁶ and *Medha* is the property of *Pitta*⁷⁷. So normalcy of *Pitta* and *Vata* are major concerns in the treatment of psychiatric illness like *Unmada* which can be done by the *Vatapitta hara* property of *Ghrita*.

The influential factors of drug distribution in blood are mainly difference in blood flow, lipid solubility and ionization. An aqueous soluble drug is usually absorbed in extra cellular spaces. They do not diffuse to CSF and other body cavities, whereas lipid soluble drugs are readily available to extra and intra cellular spaces. Blood brain barrier (BBB) has a lipophilic molecular structure. This makes the lipids and lipid soluble drugs pass easily through BBB. So the drugs which are given in the form of ghee which are lipids rapidly absorbed in the target areas of central nervous system. Traditionally prepared ghee contains DHA, an omega 3 long chain poly unsaturated fatty acid. This is seen in high concentration in brain cells too. Moreover studies have shown that DHA have positive outcome in cognitive decline. Ghee is known to have antioxidant property which acts upon the degenerative brain cells and repair them. It also acts in normalizing the chemical changes in brain by balancing the neurotransmitters. By applying the theory of similarity, it can be said *Mastishka* (brain) which resembles molten ghee can be supplemented with clarified butter in various therapies⁷⁸.

Conclusion

Analysis of mode of action leads us to the inference that *Kalyanaka ghrita* may be more effective in the management of *Kaphaja unmada*, characterised by slow or weak voice and body movements, anorexia, desire for women (sex) and solitude, excessive sleep, vomiting, dribbling of saliva, symptoms pronounced just after intake of food, whitish discoloration of nails constitute *Kaphaja unmada*, a classical example being depression.

REFERENCES

1. Vaidya Jadavji Trikamji Acharya. Charaka Samhita by Agnivesa. Chowkhamba Krishnadas Academy, Varanasi. 2006; P.223.
2. https://www.who.int/mental_health/advocacy/wb_background_paper.pdf dt 26.3.2019
3. Jacob KS, Patel V. Classification of mental disorders: a global mental health perspective. The Lancet 2014;383:1433-35.
4. Global Burden of Disease Study 2013 Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. The Lancet 2015;386:743-800.
5. World Health Organization [Internet]. Mental health: suicide prevention (SUPRE). [Internet]. Available from http://www.who.int/mental_health/prevention/suicide/suicideprevent/en/index.html dt 26.03.2019
6. Rajput P, Mamidi P. An Open Label Pilot Study of Kalyanaka Ghrita in the Management of Obsessive Compulsive Disorder. [Internet] 2018. [Cited 2019 March 26] 8(3):118-25.
7. <https://www.who.int/news-room/fact-sheets/detail/mental-disorders>
8. Vagbhata (2006). Ashtanga Hridaya Translated by Prof. K.R.Srikantha Murthy. Chaukhamba Krishnadas Academy, Varanasi.
9. Madhavakara (2000) Madhava nidana, 3rd Ed, Translated by Prof K.R.Srikanta Murthy, Chaukhamba orientalia, 71
10. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, Varanasi; 7
11. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, Varanasi; 10.
12. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, Varanasi; 9.
13. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, Varanasi; 403.
14. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, Varanasi; 221.
15. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, Varanasi; pp.196.
16. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, Varanasi; pp.263.
17. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, Varanasi; pp.426.
18. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, Varanasi; pp.114.
19. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, Varanasi; pp.118.
20. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, Varanasi 287.
21. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.285.
22. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.248.
23. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.199.
24. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.288.
25. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by

- Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.91.
26. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.110.
27. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.130.
28. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.582.
29. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.52.
30. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.255.
31. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.222.
32. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.491.
33. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.484.
34. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.399.
35. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.202.
36. Shri Bhavamishra (2006). Bhavprakasha Nighantu. Haritakyadi varga, Commentary by Prof. K. C. Chunekar. Edited by Late Dr. G.S. Pandey Chaukhamba Bharati Academy, pp.187.
37. Jain PK, Debajyoti D, Nalini P, Prachi J. Traditional Indian Herb Emblica Officinalis And Its Medicinal Importance. Innovare Journal of Ayurvedic Sciences [Internet] 2016. [Cited 2019 March 26]; 4(4): 1-15
38. Hazra B, Sarkar R, Biswas S, Mandal N. Comparative study of the antioxidant and reactive oxygen species scavenging properties in the extracts of the fruits of Terminalia chebula, Terminalia bellerica and Emblica officinalis. BMC Complementary and Alternative Medicine. [Internet] 2010. [Cited 2019 March 26]; 10(20).
39. Kalva S, Raghunandan N. Anti-oxidant study of citrullus colocynthis roots in streptozotocin induced diabetic rats. International Research Journal of Pharmacy. [Internet] 2018. [Cited 2019 March 26]; 9(3):58-66.
40. Sharma V, Lohia N, Handa V, Baranwal M. *Amomum subulatum* seed extract exhibit anti oxidant, cytotoxic and immune -suppressive effect. Indian Journal of Biochemistry and Biophysics. [Internet] 2017. [Cited 2019 March 26]; 135-139.
41. Gupta S, Walia A, Malan R. Phytochemistry and pharmacology of *cedrus deodera*: an overview. International journal of pharmaceutical sciences and research. [Internet] 2011. [Cited 2019 March 26]; 2 (8) 2010-2020.
42. Blando F, Gerardi C, Nicoletti I. Sour Cherry (*Prunus cerasus* L) Anthocyanins as Ingredients for Functional Foods. J Biomed Biotechnol. [Internet] 2004. [Cited 2019 March 26]; 2004(5): 253-258.
43. Jayaram S, Dharmesh SM. Assessment of antioxidant potentials of free and bound phenolics of *Hemidesmus indicus* (L) R.Br against oxidative damage Pharmacognosy Res. [Internet] 2011 [Cited 2019 March 26]; 3(4): 225-231.
44. Padmalochana K, Dhanarajan MS, Lalitha R, Sivasankari H., Evaluation of the Antioxidant and Hepatoprotective activity of *Cryptolepis Buchanani*. J App Pharm Sci.[Internet] 2013. [Cited 2019 March 26]; 3 (02): 099-104.
45. Kulkarni SK, Dhir A. Overview of Curcumin in Neurological Disorders. Indian J Pharm Sci. [Internet] 2010 [Cited 2019 March 26]; 72(2): 149-154.
46. Venukumar MR, Latha MS. Antioxidant effect of *Coscinium fenestratum* in carbon tetrachloride treated rats. Indian J Physiol Pharmacol. [Internet] 2002 [Cited 2019 March 26]; 46(2):223-8.
47. Singh JC, Alagarsamy V, Parthiban P, Selvakumar P, Reddy YN. Neuroprotective potential of ethanolic extract of *Pseudarthria viscida* (L) Wight and Arn against beta-amyloid(25-35)-induced amnesia in mice. Indian J Biochem Biophys. [Internet] 2011 [Cited 2019 March 26]; 48(3):197-201.
48. Chandra M, Omprakash, Kumar R, Bachheti RK, Bhushan B, Kumar M, and Pant AK. β-

- Selinene-Rich Essential Oils from the Parts of *Callicarpa macrophylla* and Their Antioxidant and Pharmacological Activities. *Medicines* (Basel). [Internet] 2017 [Cited 2019 March 26]; 4(3): 52.
49. Sridharan S, Mohankumar K, Jeepipalli SP, Sankaramourthy D, Ronsard L, Subramanian K, Thamilarasan M, Raja K, Chandra VK, Sadras SR. Neuroprotective effect of *Valeriana wallichii* rhizome extract against the neurotoxin MPTP in C57BL/6 mice. *Neurotoxicology*. [Internet] 2015. [Cited 2019 March 26]; 51:172-83. Chang KM, Choi SI, Kim GH. Anti-oxidant Activity of *Saussurea lappa* C.B. Clarke Roots. *Prev Nutr Food Sci*. [Internet] 2012 [Cited 2019 March 26]; 17(4): 306-309.
50. Chandrashekar BS, Prabhakara S, Mohan T, Shabeer D, Bhandare B, M Nalini M, Sharmila PS, Meghana DL, Reddy BK, Rao HMH, Sahajananda H, and Anbazhagan K. Characterization of *Rubia cordifolia* L. root extract and its evaluation of cardioprotective effect in Wistar rat model. *Indian J Pharmacol*. [Internet] 2018 [Cited 2019 March 26]; 50(1): 12-21.
51. Rahimi HR, Arastoo M, Ostad SN. A Comprehensive Review of *Punica granatum* (Pomegranate) Properties in Toxicological, Pharmacological, Cellular and Molecular Biology Researches. *Iran J Pharm Res* [Internet]. 2012 [Cited 2019 March 26]; 11(2): 385-400.
52. Gupta CP. Antidepressant effect of *Elettaria cardamomum* via antioxidant like activity. *International Journal For Research Publication & Seminar*. [Internet] 2018. [Cited 2019 March 26]; 9(2): 51-56.
53. Krishnaveni A, Thakur SR. Free radical scavenging activity of *Jasminum sambac*. *Journal of global trends in Pharmaceutical Sciences*. [Internet] 2014. [Cited 2019 March 26]. 5(2).1658-1661.
54. Parimala M, Shoba FG. Phytochemical analysis and *in vitro* antioxidant activity of hydroalcoholic seed extract of *Nymphaea nouchali* Burm. f. *Asian Pac J Trop Biomed*. [Internet] 2013 [Cited 2019 March 26] ; 3(11): 887-895.
55. Mohankumar A, Shanmugam G, Kalaiselvi D, Levenson C, Nivitha S, Thiruppathi G, Sundararaj P. East Indian sandalwood (*Santalum album* L.) oil confers neuroprotection and geroprotection in *Caenorhabditis elegans* via activating SKN-1/Nrf2 signaling pathway. *RSC Adv*. [Internet] 2018 [Cited 2019 March 26]; 3;8(59):33753-33774.
56. Afshari AR, Sadeghnia HR, Mollazadeh H. A Review on Potential Mechanisms of *Terminalia chebula* in Alzheimer's Disease. *Adv Pharmacol Sci*. [Internet] 2016 [Cited 2019 March 26]; 2016: 8964849.
57. R. Jain, R. Pandey, R. N. Mahant, D.S. Rathore, A Review on Medicinal Importance of *Emblica officinalis*. *International Journal of Pharmaceutical Sciences and Research* 2015; Vol. 6(1): 72-84.
58. Keane KM, Haskell-Ramsay CF, Veasey RC, Howatson G. Montmorency Tart cherries (*Prunus cerasus* L.) modulate vascular function acutely, in the absence of improvement in cognitive performance. *Br J Nutr*. [Internet] 2016 [Cited 2019 March 26]. 116(11):1935-1944.
59. Singh JC, Alagarsamy V, Parthiban P, Selvakumar P, Reddy YN. Neuroprotective potential of ethanolic extract of *Pseudarthria viscida* (L) Wight and Arn against beta-amyloid(25-35)-induced amnesia in mice. *Indian J Biochem Biophys*. [Internet] 2011 [Cited 2019 March 26]; 48(3):197-201.
60. Subhan F, Karim N, Gilani AH, Sewell RD. Terpenoid content of *Valeriana wallichii* extracts and antidepressant-like response profiles. *Phytother Res*. [Internet] 2010 [Cited 2019 March 26]; 24(5):686-91.
61. Sahu S, Ray K, Yogendra Kumar MS, Gupta S, Kauser H, Kumar S, Mishra K, Panjwani U. *Valeriana wallichii* root extract improves sleep quality and modulates brain monoamine level in rats. *Phytomedicine*. [Internet] 2012 [Cited 2019 March 26]; 19(10):924-9.
62. Sridharan S, Mohankumar K, Jeepipalli SP, Sankaramourthy D, Ronsard L, Subramanian K, Thamilarasan M, Raja K, Chandra VK, Sadras SR. Neuroprotective effect of *Valeriana wallichii* rhizome extract against the neurotoxin MPTP in C57BL/6 mice. *Neurotoxicology*. [Internet] 2015. [Cited 2019 March 26]; 51:172-83.
63. Patil RA, Jagdale SC, Kasture SB. Antihyperglycemic, antistress and nootropic activity of roots of *Rubia cordifolia* Linn. *Indian J Exp Biol*. [Internet] 2006. [Cited 2019 March 26]; 44(12):987-92.
64. Padmaja Kalshetti, Ramesh Alluri, Prasad Thakurdesai. Antidepressant and Anti-Anxiety Effect of Ellagic Acid from *Punica granatum* L. Rind in Olfactory Bulbectomy Model in Rats. *Int. J. Pharm. Sci. Rev. Res.*, 34(1), September-October 2015; Article No. 32, Pages: 197-204

65. Gaurav Gupta, Imran Kazmi, Muhammad Afzal, Gaurav Upadhyay, Rajnish Singh, Solomon Habtemariam. Antidepressant-like activity of Embelin isolated from Embelia ribes. *Phytopharmacology* 2013, 4(1), 87-95
66. Masoumi-Ardakani Y, Mahmoudvand H, Mirzaei A, Esmaeilpour K, Ghazvini H, Khalifeh S, Sepehri G. The effect of Elettaria cardamomum extract on anxiety-like behavior in a rat model of post-traumatic stress disorder. *Biomed Pharmacother.* 2017;87:489-495.
67. Arun Mittal, Satish Sardana, Anima Pandey. Ethnobotanical, phytochemical and pharmacological profile of *Jasminum sambac* L. Ait. *Journal of Pharmaceutical and Biomedical Sciences.* 2011,11(05):1-7.
68. Madhusudan P Joshi, Sneha R Satarkar, Vedita Hegde Desai. Comparative Study of Central Nervous System Effect of Santalum album Linn. Paste Fragrance v/s Aqueous Extract in Wistar Albino Rats. *American Journal of Phytomedicine and Clinical Therapeutics.* *AJPCT*,1,8,2013,661-671.
69. Gautam M, Agrawal M, Gautam M, Sharma P, Gautam AS, and Gautam S. Role of antioxidants in generalised anxiety disorder and depression. *Indian J Psychiatry.* 2012, 54(3): 244-247.
70. Xu Y, Wang C, Klabnik JJ, O'Donnell JM. Novel Therapeutic Targets in Depression and Anxiety: Antioxidants as a Candidate Treatment. *Curr Neuropharmacol.* 2014; 12(2):108-19.
71. Vagbata Ashtanga Hridaya with the Sarvanga Sundari commentary of Indu, edited by Vaidya B.H.P, reprint ed. Chaukamba orientalia. 1995, Sutra Sthana 5/37-39
72. Charaka: Charaka Samhita of Agnivesha, revised by Charaka and Dridhabala with the Ayurveda – Dipika commentary of Chakrapanidatta, edited by Sharma. R.K Das.B, Reprint ed. Chaukamba Orientalia. 2009, Vimana Sthana, 1/14
73. Charaka: Charaka Samhita of Agnivesha, revised by Charaka and Dridhabala With the Ayurveda – Dipika commentary of Chakrapanidatta, edited by Sharma. R.K Das.B, Reprint ed. Chaukamba Orientalia. 2009, Sutra Sthana, 27/232.
74. Charaka: Charaka Samhita of Agnivesha, revised by Charaka and Dridhabala with the Ayurveda – Dipika commentary of Chakrapanidatta, edited by Sharma. R.K Das.B, Reprint ed. Chaukamba Orientalia. 2009, Chikitsa Sthana, 27/233.
75. Swatmarama: The Hatha yoga pradeepika with English translation, edited by pancham sinh. Munshiram Manoharlal publishers pvt ltd. 2014, p.51 31.
76. Susrutha: Susrutha Samhitha with Nibanda sangraha commentary of Delhana edited by Yadavji Trikamji Acharya. 2nd ed. Chaukamba Krishnadas academy. 2001, Sutra Sthana 15/2
77. Madhavi A, Shetty SK, Savitha HP, Hussain H. A critical review on the usage of ghrta in unmade. *J Biol Sci Opin [Internet].* 2016. [Cited 2019 March 26] 4 (4).148-152.

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