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**AN ANALYSIS UPON THE ROLE OF VARIOUS
HERBAL REMEDIES AND DIETARY SUPPLEMENTS
FOR THE TREATMENT OF DEPRESSION AND
ANXIETY DISORDERS**

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An Analysis upon the Role of Various Herbal Remedies and Dietary Supplements for the Treatment of Depression and Anxiety Disorders

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Abstract – This review paper looks at all the herbal medicines and formulas in treating anxiety disorders. A thorough Pubmed and the Cochrane internet search was made for pharmacological and clinical evidence of herbal medicines with antianxiety action. Good evidence exists for the use of kava in the treatment of anxiety, while there is insufficient clinical evidence for the use of many other herbal medicines in psychiatric disorders. Newer herbal preparations that potentially have significant use in anxiety and urgently require more research are Rhodiola rosea (roseroot), Crocus sativus (saffron), Passiflora incarnata (passionflower) and Piper methysticum (kava). They need further evidence base via clinical studies. Anxiety disorders are commonly researched but the efficacy of herbal medicines in these disorders needs to be studied further.

Stress and stress related disorders like mood disorders and personality disorders including anxiety and depression become the major problem of metropolitan cities. Every third individual living in big cities is suffering from stress and related disorder, amazing but it is true that in 21st century when we are talking about genomics and chemical weapons world is destroying by fake thoughts. With the astonishing development in contemporary medicine pathogens are conquered but mind is still beyond the reach of science. Human mind has terrific power that can even endure the whole universe become ill merely by poor thoughts. Ayurveda, the ancient medical science is the world oldest treatise that gives emphasis on management of thoughts for successful management of psychiatric diseases. Ayurveda gives three fold treatment approaches for every disease including both pharmacological as well as non-pharmacological measures.

Herbal remedies are used by many people suffering from anxiety or depression. It is therefore important to know whether they generate more good than harm. A systematic review of the published literature revealed trial data for Ginkgo biloba, Lavandula angustifolia, Hypericum perforatum, Valeriana officinalis, Crataegus oxyacantha, Eschscholzia californica, Matricaria recutita, Melissa officinalis, Passiflora incarnate and Piper methysticum. Only two of these herbal remedies are supported by sound evidence: Hypericum perforatum (St John's wort) for mild to moderate depression and Piper methysticum (kava) for anxiety.

INTRODUCTION

The conventional medical sciences have come up with many pharmaceutical dosage forms for the treatment of anxiety. Some examples are the benzodiazepines antidepressants (monoamine oxidase inhibitors, selective serotonin reuptake inhibitors and tricyclics-ACAs) b blockers, azaaspirones and anticonvulsant. However, these agents may exert different therapeutic lesions such as sedation, cognitive changes and possibility of addiction. Prescribed drugs includes benzodiazepines (most commonly, Valium, Xanax, Klonopium, Ativan, Librium, Tranxene, Serax, and Centrax). For people of sleeping the benzodiazepines estoril, Dalmane, or Halcion may be prescribed. These

drugs are considered central nervous system depressants and they have a calming effect. Another group of frequently prescribed drugs for panic attacks and when depression is also present, are the antidepressants. There are three categories. The most promising are now the SSRI class, or Selective Serotonin Reuptake Inhibitors, like Prozac, Paxil, and Zoloft. They work by stimulating the production of Serotonin, a neurotransmitter in the brain. Other antidepressants like Mao Inhibitors (Nordil, Parnate, and Marplan) and tricyclics (Tofrinil, or imipramine, Desyrl, Surmontil, Elavil, Sinequan, Norpramin, and Pamelor) are also prescribed. However MAO has potentially dangerous side effects if restricted dietary rules are not followed and so are losing favor. Three

antidepressants that do not fit into the above categories are Wellbutrin, Anafranil, and Effexor, which combine an SSRI with a tricyclic. Another drug, different from the rest, but especially effective for panic attacks, is Pubsar. Other medications are prescribed, such as drugs that control blood pressure or heart rate, especially if cardiac factors such as high blood pressure, tachycardia or Mitral valve Prolapse are contributing anxiety condition. Finally B blockers such as Inderal or Tenormin are sometimes prescribed for those whose panic or anxiety symptoms include severe palpitations.

Manifestation of Anxiety

Psychological	Physiologic
Apprehension	Tremor
Irritability	Restlessness
Nervousness	Headache
Feeling and Inadequacy	Perspiration
Indecision	Constipation
Worry	Diarrhea
Feeling of Impeding doom	Nausea
Fear	Muscle Tension
Rumination	Palpitation

Table 1. ANXIETY AND INSOMNIA

As compared Tibb Unani, on anxiety benchmark deals the patient on holistic parameters in a dual fashion jointly together for curative and preventive strategies. The curative herbal medicaments deal to correct or otherwise physiologically, pharmacologically, or biomedically alter or wipe out or reverse the symptoms for normal human behavior. While in case of preventive scheme the different high protein seeds (like Almond, Pistachio, Kaju, Kaddu, Kahu etc) provide stimulus as brain tonic and strengthen the neuron activity. In addition different forms of oils obtained from herbal medicaments (Roghan Labub Saba, Roghan Kahu, White Gourd Seeds etc.) as massage helps in relaxing of muscle spasm and other physical state to overcome anxiety malaise. Furthermore Murrabay and Muffarrehat (exhilarates) also provide the basic ingredients that are helpful as adjunct therapy for nervous tension and other similar syndromes. Tibb Unani places importance on the nutritional food, and that therapy could be seen as replacement for eating behavior and habits together with medication and this stands true in case of psychiatric illness where nutritional pattern also plays an important function to overcome abnormal behavior and temperament.

The nutritional therapy can be effective alternative or adjunct to herbal drug therapy. Some researchers implicate blood chemistry as contributing to anxiety and recommend-reducing intake of refined sugar. The stimulant diet like caffeine should also be avoided. Furthermore cold and allergy preparations have stimulant and adrenaline-stimulating properties be reduced and eliminated. Nicotine should be discarded, although quit smoking is extremely anxiety provoking. We know poor diets result from depression? Each of the diet recommended below are consistent with good health.

Anxiety is a psychological disorder characterized by a persistent and disproportionate fear unrelated to genuine risk.

There are several types of anxiety disorders including generalized anxiety disorder, panic disorder, social anxiety disorder and specific phobias. Though, therapeutic drugs such as monoamines, neurosteroids, benzodiazepines and serotonin are used in the treatment of anxiety disorders but due to the side effects of them, now herbal medicines are thought to be safe for treatment of anxiety disorders.

Anxiety disorders are one of the most prevalent and highly comorbid psychiatric conditions. Since the past decade, many herbal medicines have been used in people with anxiety disorders. Due to the increasing popularity of herbal medications majority of the patients are consulting herbalists, naturopaths, and other healers, in addition to physicians. A study reveals that 44% of psychiatric patients with anxiety disorders had used herbal medicine (mainly for psychiatric purposes) during the previous 12 months. There is however, a limited data regarding the benefits and liability of herbal remedies. There have been few reports of serious adverse effects from these medications and by and large these medications have been considered safe and effective. This article reviews the literature on various herbal medications in the treatment of anxiety disorders as well as anxiety in general.

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Anxiety, fear and worry are all completely natural human feelings. If these feelings occur and endure for an extended period, it affects both physical and mental health. This leads to clinical anxiety disorders. There are many types of treatment available to treat anxiety disorders. This article outlines more common herbal remedies to treat anxiety disorders.

Anxiety is an aversive emotional state, in which the feeling of fear is disproportionate to the threat. Anxiety is implicated in a number of psychiatric disorders, such as depression, panic attacks,

phobias, generalized anxiety disorder, obsessive-compulsive disorder and post-traumatic stress disorder. Anxiety disorders are the most common class of neuropsychiatric disorders in USA (Kessler et al., 2005) and many other countries. The life time prevalence of panic attacks (a form of anxiety disorder) is around 7-9% in most countries and 1% alone in India with the prevalence of generalized anxiety disorder is very high i.e. 8.5% in the general population.

Anxiety disorders affect 16.6% of population worldwide (Somers et al., 2006) and numerous efforts have been made to understand the pathophysiology of the disease and treatments. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), anxiety is characterized by a feeling of persistent worry that hinders an individual's ability to relax [Diagnostic and Statistical Manual of Mental Disorders Washington D.C.: American Psychiatric Association, 4 2000]. Anxiety disorders are described and classified in DSM and several anxiety disorders share common clinical symptoms such as widespread anxiety, physiological anxiety symptoms, and behavioral disturbances.

COMMON HERBAL REMEDIES FOR ANXIETY

Ayurveda, the Indian traditional system of medicine uses herbs and their preparations to treat various neuropsychiatric disorders. Numerous herbs have been used for centuries in folk and other traditional medicine to calm the mind and positively enhance mood. Herbal medicine which plays an important role in developing countries, are once again becoming popular throughout developing and developed countries. Study by Sparreboom et al. (2004) revealed that use of herbal medicine is increasing enormously in the Western world. In spite of the large number of animal studies evaluating the potential anxiolytic effects of plant extracts, very few controlled studies have been conducted in a clinical setup. The efficacy and safety of utilizing these natural drugs to treat anxiety, has only just begun to be exactly tested in clinical trials within the last 10 to 15 years. For instance, both Kava-kava (*Piper methysticum*) and St. John's wort (*Hypericum perforatum*) showed beneficial effectiveness in double blind, randomized placebo controlled trials to treat anxiety and depression. Also, extracts of valerian, hops, lemon balm and passion flower preparations have been employed for the prevention and treatment of psychiatric disorders such as anxiety, sleep disorders, convulsions, cognitive impairment and depression. The commonly used herbal remedies for treating anxiety disorders are described below.

Passion flower - *Passiflora incarnata* is a folk remedy for anxiety. The anxiolytic effects of passionflower are well documented in rodents. In randomized

doubleblind study, passion flower extract was effective in 18 generalised anxiety disorder (GAD) outpatients as compared to oxazepam. Also, impairment in the job performance was increased in oxazepam group as compared to *Passiflora* extract treated group. In another double-blind placebo-controlled study, preoperative oral *Passiflora incarnata* reduces anxiety in ambulatory surgery patients.

Kava kava (*Piper methysticum*) - There is substantial evidence that kava has a positive effect on the symptoms of anxiety disorders. Animal studies have demonstrated anti-anxiety activity of kava. Several randomized double-blind clinical studies in GAD patients showed beneficial effect of kava-kava in reducing anxiety. Kava-kava was used in numerous controlled clinical studies to treat anxiety disorders, but the subjects included in these studies were heterogeneous i.e., they were diagnosed with agoraphobia, specific phobia, social phobia, adjustment disorder with anxiety. In the study by Connor & Davidson, kava extract was compared with placebo in GAD patients (2002). In another 8-week randomized, double-blind multi-center clinical trial, the efficacy of *Piper methysticum* was compared with two anxiolytic drugs opipramol and buspirone in GAD patients. Meta-analysis study by Pittler and Ernst reinforced the anxiolytic effect of kava in generalized anxiety patients and indicated a significant reduction in anxiety parameters evaluated by the Hamilton Anxiety (HAMA) scale.

Valeriana officinalis - Valerian is one of the most popularly used herbal medicines for insomnia and is also used to treat anxiety. Hydroalcoholic and aqueous extracts of valerian roots have shown affinity for the GABA-A receptor in the brains of rats. In humans, valerian has been successful in the treatment of insomnia and tension. Andreatini et al. (2002) compared the extract of *Valeriana officinalis* L. (81mg of valepotriates as active ingredients) with placebo and diazepam (6.5 mg) in patients with GAD (DSM-III-R, 12 patients per group). Only the diazepam and valepotriates groups showed a significant reduction in the psychic factor of HAMA scale and the preliminary data obtained in the present study suggest that the valepotriates may have a potential anxiolytic effect on the psychic symptoms of anxiety. The limitations of this study are small sample size and a low dose of diazepam, such studies should be replicated with improved methodological design.

Ginkgo biloba - Extract of *Ginkgo biloba* (EGb 761) significantly reduced the detrimental effect of learned helplessness in a subsequent conditioned avoidance task. In the elevated plus maze, senescent mice treated with EGb 761 spent more time in open arms than those treated with vehicle control. Woelke et al. (2007) compared a standardized extract of *Ginkgo*

biloba L. (EGb 761) in doses of 480mg and 240mg with placebo for four weeks, involving patients with GAD and adjustment disorder with anxious mood (DSM-III-R). The two doses of EGb 761 showed a greater reduction in HAMA scores compared to placebo, as well as a statistically significant reduction in somatic symptoms compared to baseline (which was not observed in the placebo group).

Galphimia glauca - Galphimia glauca Cav. is a plant used in Mexican traditional medicine as a "nerve tranquilizer". Previous studies have demonstrated anxiolytic effect of methanolic extract from this plant species. Herrera-Arellano et al. (2007) conducted a controlled study comparing the extract Galphimia glauca Cav. with lorazepam in patients with GAD with 72 and 80 patients per group, respectively. Both groups of patients showed a significant reduction in scores of HAMA, without any difference between treatments.

PANCHAKARMA THERAPIES USEFUL IN THE MANAGEMENT OF ANXIETY AND DEPRESSIVE ILLNESS

Shirodhara - Ail experimental study conducted by Kazuo Uebaba et al. demonstrating the probable mode of action of Shirodhara showed that the subjects' feelings during Shirodhara had deep restfulness with less anxiety—as if the subject were between the sleep and awaken states. Shirodhara induced bradycardia and the relative suppression of LF/HF power spectrum density, which indicated lowered sympathetic tone.

Expired gas analysis showed a decreased tidal volume and CO₂ excretion. The EEG showed the slowing of the wave, an increase in α and θ activity, and an increase in right-left coherence. These metabolic, ECG, and EEG findings support the reported experiences of relaxed and low metabolic states during Shirodhara. Physiological changes during Shirodhara were similar to those of meditation, including α -wave dominance in the frontal area and a decrease in heart rate and CO₂ excretion. These findings indicated a change in the function of the frontal lobe, limbic system, brain stem, and autonomic nervous system. The neurophysiological mechanism of the effects of Shirodhara on the psycho-physiological changes may be related to the tactile stimulation of the skin or hair follicles innervated by the first branch of the trigeminal nerves (ophthalmic nerve). The impulses would be transmitted to the thalamus through the principal nucleus and forward to the cerebral cortex (somato-sensory field) or limbic system³⁴.

Daivavyapasaraya (Spiritual Therapy)- It comprises of Mantra (incantation), Ausadhi (talisman), Mani (gems), Mangala (auspicious offerings), Bali (religious scarification), Upahara (gift), Homa (oblation), Niyama (religious rules), Prayascitta (atonement), Upavasa (fasting), Svastyayana (chanting of auspicious hymns), Prampata (paying obeisance), Gamana (pilgrimage)

etc. It has empirical powers to eradicate diseases. All the items enumerated under this therapy are effective in the eradication of disease only due to the divine influence.

Sattvavajaya (Psychotherapy)- In Ayurveda, the modality of treatment that is used for the management of Psychiatric disorders is known as Sattvavaj aya. Sattvavaj aya includes both Psychotherapy and oral medication. Having control over the Manas (Psyche) such as to control it or withdraw it from coming into contact with harmful or unwholesome objects is the main object of Sattvavaj aya³⁵. The five aspects of Sattvavaj aya treatment include Jnanam (spiritual knowledge), Vijnanam (Knowledge of the scriptures related to truth), Dhairya (increasing the patience of the person by counseling or meditative procedures), Smriti (memorizing the past incidences) and Samadhi (meditation). Whole of the modern psychiatry can be included into these five types. Good conduct, following ethics of good moral, having spiritual knowledge, believing in Supreme Being, developing forgiving attitude and selfless devotion are important dimensions of Sattvavajaya Chikitsa. Management as well as intonation of thoughts (Manonigraha) by different prospective of Sattvavaj chikitsa is the foremost therapy for the treatment of psychosomatic diseases. Sattvavajaya means method of training one thought in positive way to utilize his maximum energy. The methods of this treatment are Bhayadarsana (terrorizing), Vismaphana (surprising), Vismarana (de-memorizing), Ksobhana (socking), Harsa (exciting), Bhatsana (chiding), etc.. Those methods may be useful in the treatment of Citodvega. The following are to be followed for the treatment of psychic disorders:

- To attend the courses of conduct relating to virtue, wealth and desire.
- To render service to the persons well versed in the nature and cure of psychic diseases.
- To obtain all round knowledge about the self-etc.

HERBAL REMEDIES FOR DEPRESSION AND ANXIETY

In this paper, I will review the evidence for or against herbal remedies as treatments for depression and anxiety. My assessment is based on a systematic review of the published literature (literature searches in Medline, EMBASE, the Allied and Alternative Medicine Database (AMED) and the Cochrane Library up to June 2005) with an emphasis on controlled clinical trials and systematic reviews (Ernst et al, 2006). Its focus is on herbal medicine; thus, non-herbal supplements are excluded even if the evidence is encouraging, as it is for omega-3 fatty acids (Freeman et al, 2006).

Depression-

Ineffective remedies: Ginkgo biloba (maidenhair tree) was tested in a small ($n = 27$) trial involving people with 'winter depression'. The results did not suggest that this approach was superior to placebo (Lingaerde et al, 1999). It has, however, been shown to be effective for conditions such as dementia (Ernst et al, 2001).

Promising remedies: Lavandula angustifolia (common lavender) was compared with imipramine in a small randomized controlled trial (RCT) including 45 individuals with moderate depression (Akhondzadeh et al, 2004). Both treatments seemed similarly effective but the study had significant methodological shortfalls (e.g. it was not designed as an equivalence trial). Another trial designed along the same lines suggested that Crocus sativus (saffron crocus) and imipramine were similarly effective (Akhondzadeh et al, 2003). Unfortunately, the same limitations applied.

Effective remedies: The only herbal remedy that has been shown beyond reasonable doubt to be effective as a treatment for mild to moderate depression is Hypericum perforatum (St John's wort). The active ingredients of this herbal medicine are probably hypericin and/or hyperforin. Its antidepressive activity seems to be due to inhibition of both serotonin reuptake and monoamine oxidase.

An authoritative systematic review and metaanalysis included 30 RCTs involving individuals mostly (but not exclusively) with mild to moderate depression (Roder et al, 2004). The methodological quality of these trials was variable but many scored highest marks. Twenty five of them, involving a total of 2129 patients, compared St John's wort with placebo. The results strongly favoured the former over the latter (risk ratio = 0.66, 95% CI 0.57–0.78, number needed to treat = 42). Five trials, involving a total of 2231 patients, compared St John's wort with conventional antidepressants (including selective serotonin reuptake inhibitors (SSRIs)). The risk ratio of 0.96 indicates equivalence of these approaches.

A subsequent Cochrane Review reported similarly encouraging results. So why use this herbal remedy if it is not better than conventional drugs? One answer could be that many patients prefer 'natural' treatments. A perhaps more convincing answer is that its adverse effects profile is preferable. In fact, St John's wort is associated with similar frequency and severity of adverse effects as placebo. There are, however, two caveats. Extracts of St John's wort powerfully interact with the cytochrome P450 enzyme system and thus increase the plasma level of a wide range of other drugs (Mills et al, 2005). It seems to follow that it is safe only for people who use no other medication. The second caveat is the suspicion that St John's wort can

trigger psychoses, particularly in patients who concomitantly take SSRIs.

Anxiety-

Ineffective remedies: No anxiolytic effects of valerian (*Valeriana officinalis*) extract were noted in an RCT involving 66 people with generalised anxiety disorder.

Promising remedies: A large RCT found that a combination of *Crataegus oxyacantha* (hawthorn), *Eschscholzia californica* (Californian poppy) and magnesium was more effective than placebo in reducing anxiety in 264 individuals with generalised anxiety disorder.

There is some evidence for the efficacy of *Matricaria recutita* (German chamomile) in the treatment of anxiety, but the study was methodologically weak. Short-term anxiolytic effects were noted after administration of *Melissa officinalis* (lemon balm) to healthy volunteers. *Passiflora incarnata* (passion flower) generated encouraging anxiolysis in an RCT with 36 people who had generalised anxiety disorder. Even though these results are encouraging they do require independent replication before firm recommendations can be made.

Effective remedies: The only herbal remedy that is demonstrably effective in reducing anxiety is *Piper methysticum* (kava). Our Cochrane Review included 11 RCTs, involving a total of 645 patients. The methodological quality of these studies was variable but some were excellent. Without exception, these trials showed anxiolytic effects of kava that were superior to placebo.

HERBAL AND DIETARY SUPPLEMENTS

Use of complementary and alternative medicine in all of its varieties, such as herbal remedies and dietary supplements, increased from 34 percent of the overall U.S. population in 1990 to 42 percent in 1997. Use appears to be twice as great in persons reporting anxiety and depression than in those reporting any other problem, except for back and neck pain. Based on results of two large-scale community surveys, investigators have noted an association between both panic disorder and major depression and the use of complementary and alternative medicine.

Currently, the preferred treatment for anxiety disorders is cognitive behavior therapy and pharmacologic agents. Beta blockers or benzodiazepines are used for time-limited and predictable anxiety disorders, whereas selective serotonin reuptake inhibitors (SSRIs), selective serotonin-norepinephrine reuptake inhibitors, tricyclic antidepressants, buspirone (Buspar), or monoamine

oxidase inhibitors are preferred for chronic or recurrent anxiety disorders.

In recent years, studies using herbal remedies and supplements to treat mild to moderate anxiety disorders have emerged. It is important for physicians to recognize that supplements offer both benefits and risks. By doing so, they can avoid an overly dismissive attitude that discourages patients from disclosing their supplement use. At the same time, understanding the limits of available evidence allows physicians to collaborate with interested patients in developing dietary supplement strategies that minimize risks and maximize benefits.

In this article, the supplements purported to ameliorate anxiety disorders are divided into three groups: herbal supplements, nutritional supplements, and neurotransmitter and hormonal precursors. These divisions are somewhat arbitrary in that all of the products are taken orally, are available over the counter, are marketed with a variety of health claims on the Internet, and are justified by their purported ultimate effects on the neurotransmitter systems that mediate worry, stress, or fatigue symptoms in patients with anxiety disorders.

Information on supplements that claim to be useful or commonly used for anxiety disorders was obtained from several Internet sites, particularly <http://www.revolutionhealth.com/drugs-treatments>, http://www.healthyplace.com/Communities/Anxiety/treatment/alternative_treatment.asp, and <http://www.naturaldatabase.com>. Medline via Ovid was used to search for clinical trials, guidelines, and meta-analyses that tested or asserted the effectiveness of these preparations in the treatment of patients with diagnosed anxiety disorders. Table 2 includes suggested supplements that have some evidence of effectiveness for treating anxiety. Only therapies with evidence of effectiveness are discussed in this review.

Type of evidence	Herbal supplements	Nutritional supplements	Neurotransmitter/hormonal precursors
Effectiveness based on meta-analysis or multiple RCTs	Kava	—	—
Effectiveness based on a single double-blind, placebo-controlled RCT	St. John's wort (for somatoform disorders), sympathy (California poppy, hawthorn, elemental magnesium)	Inositol, 18 g (one RCT for panic disorder and one RCT for OCD)	5-hydroxytryptophan (serotonin precursor; for panic disorder)
Weak effectiveness based on clinical/open trials	Passionflower, St. John's wort (for GAD), valerian	—	—
Clinical trials demonstrating noneffectiveness	Cannabis	Omega-3 fatty acids (as adjunct for treatment-resistant OCD)	—

Table 2. Supplements with Clinical Trial Evidence of Effectiveness or Noneffectiveness for Treating Anxiety.

JATAMANSI, THEIR SUBSTITUTE AND ADULTERANT SPECIES

Jatamansi, Botanically equated to *Nardostachys jatamansi* DC. (Family-Valerianaceae) is an important

drug of Ayurveda. It is considered as a good stimulant, tonic, antispasmodic, laxative and also used in epilepsy. It is also applied locally in some skin problem by traditional healers in Himalayan region. Five iridoids, 1-homoacevaltrate, 1-homoisoacevaltrate, 1.1-homohydroxyldihydrovaltrate, 10-acetoxy-1-homovaltrate hydrin, and 10-acetoxy-1-acevaltrate hydrin, along with 10 known analogues, were isolated from the rhizomes and roots of *V. wallichii*. A poly-oxygenated crystalline material together with p-eudesmol, elemol, p-sitosterol, angelicin and jatamansinol were isolated from the rhizome of *V. wallichii*². A terpenoid – spirojatamol has isolated from rhizome of *V. wallichii*, Nardostachysin has also been elucidated³. Jatamols (A&B) has been also reported from the roots. Because of high commerce, traders are subjecting it to adulteration/substitution. The rhizome of *N. jatamansi* is often contaminated with *S. vaginatum* as an adulterant⁵. A detailed chemical investigation of this species has been established, however, botanical investigations, viz, macro & microscopical comparison with the drugs used under the name of *jatamansi* have not yet been carried out. Therefore, the present study is an attempt to establish macro and microscopic characteristic of *N. jatamansi* as well to differentiate these three species, viz. *Nardostachys jatamansi*, *Valeriana wallichii* and *Selinum vaginatum*,

Morphology and physiological description -

Jatamansi is a perennial, dwarf, hairy, rhizomatous herb, densely covered with fibrous or lamellar remains of old sheaths. Its flowering stems are 5-50 cm tall. Rosulate leaves narrowly spatulate or linear-oblongate. 3-25 cm long. 0.5-2.5 cm wide, with 3 parallel veins, glabrous or sparsely puberulous, base attenuate into petiole nearly equal to leaf blade in length, margin entire. apex obtuse. Leaves are cauline. Lower ones elliptic to obovate: upper ones sessile, oblongate to lanceolate, sometimes sparsely serrate. Capitula of cymes, terminal. 1.5-2 cm broad: main inflorescence rachises and lateral rachises sometimes elongated: involucre bracts 4-6. lanceolate: bracts narrowly ovate to ovate, nearly equal to flowers in length; bracteoles 2. small. Its calyx are 5-lobed: lobes semiorbicular to triangular-lanceolate, enlarged in fruit, usually ciliate. Corolla purple-red. campanulate. 4.5- 9 nun. 5-lobed: lobes broadly ovate to oblong. 2-3.8 nun. outside hairy, occasionally glabrous, white villous. Stamens are nearly equal to corolla in length, and generally 4 in number: filaments villous. Style nearly equal to stamens in length; stigma capitate. Achenes obovoid. 3-4 nun. totally or only above white hispid, to entirely glabrous: persistent calyx with lobes deltoid to ovate. 1.5-2.5 nun. obviously reticulate veined, margin usually white hispid, apex acuminate. rarely acute. The leaves are pinnatisect without stipules. The flower is cluster, and usually has many small flowers. They are bilaterally symmetric and usually bisexual. The calyx is located on the top of the ovary and basically four lobed. The corolla is united and having 5 lobes. Ovary three carpelate of which only one is fertile.

Within Valerianaceae there is a degree of specialization in flower and fruit morphology. The most noticeable differences are in floral morphologies across the family especially in the number of stamens which varies from 1 to 5.

Medicinal uses - Jatamansi is known for several medicinal properties. It is most commonly used as a nerve sedative in the treatment of insomnia and also to treat chronic irritability and nervousness. with exhaustion and debility. Jatamansi primarily acts upon the nervous system. inducing a natural sleep, without any adverse effect upon awakening, and appears to lack the stimulating effects. Rhizome of Jatamansi have also been used in traditional medicines as bitter tonic, stimulant, antipyretic, antispasmodic. antiseptic, anti-lipid peroxidative. anti-malarial. anti-rhythmic, sedative antidepressant, diuretic, cardiac tonic, tranquilizer, laxative. stomachic, improve learning & memory. and also shows cytotoxic property. Extract of Jatamansi is used in preparation of hair tonic, hair oils, promoting hair blackness, growth and luster. It is also used in oils and pastes that improve complexion and general health of the skin. The detailed medicinal properties are being discussed in following heads.

Antioxidant property - The antiperoxidative property of jatamansi was investigated using an iron-induced lipid peroxidation model in rat liver, quantified by thiobarbituric acid reactive substance (TBARS) content. They have observed in their study that the extract provides protection against lipid peroxidation (Tripathi et al. 1996). In another study an aqueous root extract from jatamansi was investigated for its antioxidant and anticataleptic effects in the haloperidol-induced catalepsy rat model of the disease by measuring various behavioral and biochemical parameters (Rahman et al. 2011).

LAVANDULA STOECHAS (USTUKHUDDUS)

Lavandula stoechas is a plant of the Lamiaceae/Labiatae family. *Lavandula* is from the Latin words for 'violet' and 'to wash' and refers to the flower colour and *Stoechas* from its growing on the Stoechades, a group of islands on the south coast of Gaul near Massila and it is much used by Muslim physicians. *Lavandula stoechas* known as "Ustukhuddus" at subcontinent. In Western India, it is wrongly named "Alfazema". In Spain it is known as "Romero Santo" meaning sacred rosemary. In the unani system it is described as "Jarobe dimagh" which means "broom of brain" because of its removing the black bile from the brain, give strengthens and improves the intellect. It was first described by Galen (First Pharmacist) so it is called "Galeenial herb". Dioscorides described it in the book "Kitabul Hashaiash". Avicenna (The Prince of Physicians) described it in his famous book "The Canon of Medicine". The oil content of *Lavandula stoechas*

varies from 0.77-1.2%. The taste of plant is bitter. Grey coloured and slightly bitter in taste with pungency is rated best quality plant. Flowers are in cluster having a smell like Camphor.

CHARACTERISTICS OF LAVANDULA STOECHAS

Habitat - It is native to the Old World and is found from Cape Verde and the Canary Islands, southern Europe across to northern and eastern Africa, the Mediterranean, southwest Asia to southeast India. Many members of the genus are cultivated extensively in temperate climates as ornamental plants for garden and landscape. This herb is found in forests and mountains having wet soils in Rabi season. In India, it is found in Bihar and Bengal but the quality is not good. It also found in Canaries, Portugal, and eastwards throughout the Mediterranean region to Constantinople and Asia Minor. The plant cultivated in Peshawar and Afghanistan is of the best quality. Qualities of *Lavandula*, which cultivated in the region of Hejaz and Rome is more persuasive in medicinal value.

Stems - Number-many, length -300 to 600 mm, colour - greyish, branched, square when young, often grow along the ground, then bend upwards, densely hairy with star type hairs, lower parts woody and rough, coppice when cut.

Leaves - Leaves like the leaves of Satar (*Zataria multiflora*) but thinner and longer than that. Opposite and paired or clustered at the nodes, fragrant when crushed, Stipules – None, Petiole – None, Blade - Grey-green, parallel sided to oblong, 8-30 mm long by 1.5-10 mm wide, dense short hairs (star type) Edges turned down but with no teeth or lobes.

Roots - Woody, shallow.

Flowers - Bracts: Floral bracts broadly egg shaped, up to 6 mm long by 7 mm wide with 3 shallow lobes, obvious veins, hairy. Bracteoles are egg shaped, 0.5 - 2 mm long, hairy. Ovary: Superior, Styles with 2 short lobes Calyx: 4-6 mm long, tubular, 13 ribbed, dense star hairs, 5 lobed and the back lobe is broader and has a notched appendage near the top. Corolla: Dark purple, rarely white or pink, tubular, 6-8 mm long. 2 lipped, upper lip has 2 lobes and a lower lip has 3 circular lobes. Stamens: 4 inside corolla tube, front pair is longer. Anthers: Yellow, kidney shaped, small, one celled.

Fruit - Pale brown with many dark spots, shiny, triangular nutlet about 2 mm diameter, hairless.

Life cycle - Seed germinates at any time of the year and grow slowly. They are semi dormant, but evergreen in summer and autumn and grow in the

winter and spring. Flowering occurs from July to November with seeds produced in spring and summer.

CONCLUSION

Herbal medications in psychiatry are still under researched. The present review looked at various herbal preparations used in anxiety. The preparations excluding kava have been under used and need further clinical trials including randomized double blind clinical evidence and direct comparisons with anxiolytic drugs to help us understand their efficacy. Most herbal medications may serve as alternatives to traditional anxiolytics in patients who do not tolerate them as they have a favorable safety profile and are free from major side effects.

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There is also a need for research of herbal medication in the management of various subtypes of anxiety disorders like post-traumatic stress disorder and obsessive compulsive disorder. The use of these medications in various age groups and diverse clinical populations is warranted.

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