



www.jahm.in  
(ISSN-2321-1563)



## ORIGINAL RESEARCH ARTICLE

# EFFECT OF JASMINE ESSENTIAL OIL IN GENERALIZED ANXIETY DISORDER: A PILOT CLINICAL STUDY

ARHANTHKUMAR A.<sup>1</sup>, SAPNA D.<sup>2</sup>, ARUN CHANDRAN R.<sup>3</sup>, SHREEVATHSA<sup>4</sup>

<sup>1,2,3</sup> Final Year P.G. Scholar Dept. of P.G. Studies in Ayurveda Siddhanta, G.A.M.C. Mysore-570004

<sup>4</sup> Professor & H.O.D. Dept. of P.G. Studies in Ayurveda Siddhanta, G.A.M.C. Mysore-570004

Corresponding author email address: arhanth.kumar@gmail.com

Access this article online :www.jahm.in

Published by Atreya Ayurveda Publications, Ilkal-587125 (India) All rights reserved.

Received on: 20/09/2013, Revised on: 28/09/2013, Accepted on: 09/10/2013

### Abstract:

**Background:** Jasmine (jatipushpa) is considered as saumanasya janaka (pleasure giving) because of its positive effect on manas which intern is due to its pleasant aroma. Charaka samhita has described pleasant odour and it has good influence on manas. Jatipushpa is having pleasant odour, by which manas moves towards the state of calmness, intern alleviates psychological disorders.

**Objectives:** To assess the effect of jasmine essential oil in the management of generalized anxiety disorder.

**Methods:** The pilot clinical study was outlined with a clinical trial design with Purposive sampling method with pre and post- test assessment of 30 patients satisfying the inclusion criteria who were incidentally selected. In the present study patients were asked the inhale jasmine essential oil for 5 minutes, for the duration of 10 days. The patients were assessed based on the Hamilton's anxiety rating scale before and after intervention, analyzed statistically using descriptive statistics, paired samples't test, contingency coefficient test /  $\chi^2$  test using SPSS for windows (version 18.0).

**Results:** The results of anxiety grading before and after treatment are highly significant with P Value (0.001). The mean value of pretest score was 25.00 and post Test it was reduced to 9.97. The overall change in the Anxiety levels is Statistically Significant.

**Conclusion:** On the basis of the results of this study it can be concluded that Inhalation of jasmine essential oil brings down the elevated state of mind. Thus essential oil of jasmine is a safe and effective drug of choice in generalized anxiety disorder.

**Keywords:** Generalized Anxiety disorder, jasmine essential oil, Hamilton's Anxiety Rating Scale.

### Introduction:

Anxiety is the automatic physiological and physical changes that occur in response to perceived threat or danger. On awareness of danger, the involuntary nervous system sends immediate messages throughout our body, to either 'fight' (tackle the situation head on) or

'flight'. Anxiety disorders are one of the most common mental disorders in psychiatric clinic<sup>1</sup>.

High stress levels can exacerbate or sometimes cause anxiety. Contributory environmental factors may include social isolation, traumatic events, physical illness, excessive alcohol or illicit substance use leads to anxiety disorder. Recent investigation of neuro-

endocrine function in anxiety disorders has focused on the hypothalamic pituitary adrenal (HPA) and hypothalamic pituitary thyroid (HPT) axes. Alterations in central Noradrenergic and Serotonergic function are hypothesized<sup>2</sup>.

Essential oils (EOs) are highly concentrated essences of aromatic plant. It can be extracted using a variety of methods such as steam distillation, solvent extraction etc. It is widely used in aromatherapy, perfumery, cosmetics, incense, medicine, household cleaning product as well as flavoring food and drink industries. EOs is also known as volatile oils and ethereal oils<sup>3</sup>. The potency and incredible fragrance power of jasmine essential oil make it a great investment even though it is one of the most expensive oils. There are well over 100 constituents found in jasmine oil, but the main chemical components are benzyl acetate, linalool, benzyl alcohol, indole, benzyl benzoate, cis-jasnone<sup>4</sup>. The therapeutic properties of jasmine essential oil are anti-depressant, anxiolytic, antiseptic, aphrodisiac, anti-spasmodic, cicatrisant, expectorant, galactagogue, parturient, sedative and tonic (uterine). In the present study essential oil of jasmine grandiflorum has taken to evaluate the effect in anxiety disorder<sup>5</sup>

#### **Objective of the Study:**

To assess the effect of Jasmine essential oil in the management of generalized anxiety disorder.

#### **Materials and methods:**

**Drug:** Essential oil of jatipushpa (*Jasmine grandiflorum*), manufactured from Chaitanya Agro Herbals, Jayalaxmipuram, Mysore is procured.

#### **Methodology**

**Sample:** 30 patients fulfilling the inclusion criteria were selected for the study by purposive sampling method.

#### **Diagnostic criteria according to DSM IV <sup>6</sup>:**

1. Excessive anxiety and worry, occurring more days than not and for at least 6 months, about a number of events or activities.
2. The person finds it difficult to control the worry.
3. The anxiety and worry are associated with three (or more) of the following six symptoms: restlessness, being easily fatigued, difficulty concentrating, irritability, muscle tension, sleep disturbance.

#### **Inclusion Criteria**

1. Patients who are having the signs and symptoms of generalized anxiety disorder.
2. Individual of either sex between the age group of 20-60 years were selected.

#### **Exclusion Criteria**

1. Patients suffering from other anxiety disorders, panic disorder, mixed anxiety disorder, obsessive-compulsive disorder, phobic disorders.
2. Patients suffering from other psychiatric disorders like dementia, schizophrenia, mood disorders, delirium.
3. Pregnant women were excluded.

**Sampling Method:** Purposive sampling method.

**Research Design:** A pilot study where the purposively selected 30 patients in one group.

**Assessment tools:** Hamilton Anxiety Rating Scale, one of the first rating scales developed by Max Hamilton in the year 1959 to measure the severity of anxiety symptoms to assess and quantify symptom severity in patients with anxiety neurosis. The scale consists of 14 items, each defined by a series of symptoms, and measures both psychic anxiety and somatic anxiety. This scale is not useful as a diagnostic or screening tool nor does it distinguish anxiety from depression.<sup>7</sup>

#### **Intervention**

Patients coming under the inclusion criteria were grouped under single group. Pre-test assessment done before intervention. After 10 days of intervention post-test assessment was done. Patients were asked to inhale the essential oil of jasmine.

**Procedure of inhalation-**

Patients were advised to take one liter of hot water. They were asked to put 3 drops of essential oil in the hot water and inhale the vapors after covering the head and neck region. Inhalation was advised for 5 minutes. This procedure was advised twice a day i.e., morning (9 AM) and evening (6PM) for the duration of 10 days.

**Assessment Criteria**

<b>Rural</b>	4 patients	13.3
<b>Urban</b>	26 patients	86.7
<b>total</b>	30 patients	100.0

**Table .No 1: Demographic details of the study**

In the present study, all the 30 patients had the symptom of apprehension (100%), 27 patients complained worry (90%), 21 patients had poor concentration (70%), 15 patients complained palpitation (50%), 14 patients had fatigue (46.7%), only 7 patients had dizziness (23.3%), 11 patients complained sweating (36.7%), 6 patients had Diarrhea (20%), 26

Assessment was made on a five point scale as follows:

0 – None, 1 – Mild (15), 2 – Moderate (45), 3 – Severe (75),4 –very severe (>75).

**Observations:**

All the patients were reported with high level of apprehension about their present state and future. Patients were hesitating to reveal their history of illness and probable cause of the disease. All the patients were aware of their problem but were unable to cope-up with problem. Among 30 samples, 11 and 19 patients were belonging to the sex female and male respectively. 26 and 4 patients were from urban and rural area respectively (Table.No.1).

patients complained irritability(86.7%), 24 patients had fear (80%), 10 patients complained depersonalization (33.3%), 9 patients had frequent desire to pass urine (30%), 7 patients were complaining chest pain (23.3%), 25 patients had initial insomnia (83.3%) and 23 patients had head ache (76.7%).(Table. No.2)

<b>Chief complaints</b>	<b>No. Of patients</b>	<b>Total in percentage</b>
Apprehension	30	100.0
Worry	27	90.0
Poor concentration	21	70.0
Palpitation	15	50.0
Fatigue	14	46.7
Dizziness	7	23.3
Sweating	11	36.7
Diarrhea	6	20.0
Irritability	26	86.7
Fear	24	80.0

Depersonalization	10	33.3
Frequent desire to pass urine	9	30.0
Chest pain	7	23.3
Initial insomnia	25	83.3
Head ache	23	76.7

**Table. No.2: showing the Distribution of chief complaints among 30 patients taken for study**

**Results:**

The individual components of Hamilton's Anxiety rating scale were assessed before and after intervention. The components like Anxious mood, Tension, Depressed mood, Autonomic symptoms, Behavior at interview are statistical significant. In components like fear, insomnia, intellectual, somatic muscular, somatic sensory, cardio vascular symptoms, respiratory symptoms, gastro intestinal and genito-urinary symptoms the effect is statistical insignificant.

The changes in the level of anxious mood, Tension component and depressive mood component before and after the treatment are highly significant with P value 0.000. The insomnia component also showed highly significant result (P = 0.001).

The results of Anxiety Grading before and after treatment are highly significant with P Value (0.000). The mean value of Pretest score was 25.00 and Post Test it was reduced to 9.97. The overall change in the Anxiety levels is Statistically Significant.(Table. No.3 and 4)

Descriptive Statistics				
	Mean	Std. Deviation	Std. Error	N
<b>Pre Test Results</b>	25.00	7.579	1.384	30
<b>Post Test Results</b>	9.97	5.678	1.037	30

**Table No.3: Effect of Intervention on Anxiety Levels**

The mean value of Pretest score was 25.00 and Post Test it was reduced to 9.97. The

change in the Anxiety levels is Statistically Significant.

Paired Samples Test					
		Paired Differences	t	df	Sig (2-tailed)
		Mean			
<b>Pair 1</b>	<b>ANXBEP – ANXAFT</b>	15.03	22.256	29	.001
	<b>25 – 9.97</b>				

**Table No.4: Statistical analysis (Paired Samples Test)**

## Discussion:

Jasmine is taken for the present study because it is one of the commonly known flowers and used in day today life. When the literature is searched it is found that Jasmine is having influence on manas and it is said to be saumanasyajanaka<sup>8</sup>. Essential oil of Jasmine is selected because it can be easily procured from the relevant sources and it is easy for administration. Essential oil was administered through inhalation because inhalation facilitates the drug delivery through the trans- nasal route and reduces the symptoms of anxiety.

As the essential oil of jasmine is having pleasant odor, it nourishes olfactory sense organ, mind<sup>9</sup> and heart<sup>10</sup>. Pleasant odor of jatipushpa after inhalation reaches olfactory region and later it reaches shiras(head) through gandhavaha srotas or dhamani (olfactory pathway) which is situated in nose. Because of katubhava (strong odor) and anu-pravana-bhava (property of reaching the target area very quickly due to its minuteness), this action will be rapid. This quality enhances the drug absorption in organ of sense of smell.

Anxiety disorders can be understood in terms of chittogvega. Where the anxiety state of manas or manas hampers the daily activities of a person. By inhaling the essential oil of jatipushpa, indriya- mana- buddhi pathways will be corrected, there by tense state of manas can be controlled. Resultant of this will be pleasant state of mind.

The olfactory region, next to respiratory region, is the foremost site from where drug can be absorbed directly into the brain by different mechanisms including transcellular, paracellular, olfactory and trigeminal neural pathways. Highly lipid soluble drug molecules show easier and better targeting ability due to higher partition coefficient. Molecules of jasmine essential oil after inhalation directly reach to blood by crossing the nasal mucosa. The highly permeable nasal epithelium allows rapid absorption to the brain due to high total blood

flow, porous endothelial membrane, and large surface area of nasal mucosa and Avoidance of first-pass metabolism.

Jasmine essential oil makes olfactory nerve cells active and it would lead to motivate limbic system and nerve cells releases different neurotransmitters. These neurotransmitters are including encephalin, noradrenalin and serotonin. Benzodiazepines of the essential oil can increase the effects of Gaba amino butyric acid and through which it acts as an anxiolytic. Linalool and linalyl acetate present in essential oil can stimulate parasympathetic system<sup>9</sup>. In addition, linalyl acetate has narcotic effects and linalool acts as a sedative. However, accurate mechanism of neurological function of jasmine essential oil is difficult to identify.

Jasmine flower has become a topic of research for many projects to evaluate its benefits. Some of the works which are carried out on jasmine flower are as follows.

- 1) The Rationale behind wearing strings of Jasmine flower by the lactating South Indian Women<sup>11</sup>.
- 2) Chemical Composition, Toxicity and Vasodilatation Effect of the Flower Extract of *Jasminum sambac*<sup>12</sup>
- 3) Anti-fertility activity of the floral buds of *Jasminum officinale* and *Jasminum grandiflorum* in rats<sup>13</sup>

## Conclusion:

A new approach towards managing Generalized Anxiety disorders or chittodvega is done in the present study. Inhalation of jasmine essential oil brings down the elevated state of mind. Present study also highlights the importance of gandha dravya in treatment. The results of Anxiety Grading before and after treatment are highly significant with P Value (0.000). The mean value of Pretest score was 25.00 and Post Test it was reduced to 9.97. The overall change in the Anxiety levels is Statistically Significant. So it can be concluded that Essential oil of Jasmine is a safe and

effective drug of choice in generalized anxiety

disorder.

### References:

1. NirajAhuja, author, A Short Text Book of Psychiatry, chapter 8, 7th edn, New Delhi, Jaypee Brothers Medical Publishers (P) Ltd, 2011,p 89
2. Kaplan and Sadock, author Synopsis of Psychiatry BehaviouralSciences / Clinical Psychiatry, chapter 16,8<sup>th</sup>edn, B. J. Waverly Pvt. Ltd., New Delhi.1999, p581
3. Thavasvelvan , extraction of essential oils from jasmine flower using Solvent extraction method: a study of feed ratio effects, 2008 may, available from;[http://umpir.ump.edu.my/605/1/extraction\\_of\\_essential\\_oils\\_from\\_jasmine\\_flower\\_using\\_solvent\\_extraction\\_method.pdf](http://umpir.ump.edu.my/605/1/extraction_of_essential_oils_from_jasmine_flower_using_solvent_extraction_method.pdf).
4. Mohdfaisalsulong, extraction of essential oils from jasmine flower using solvent extraction method, november, 2006 available from;[http://umpir.ump.edu.my/577/1/Mohd.\\_Faisal\\_Sulong%40A\\_Rashid.pdf](http://umpir.ump.edu.my/577/1/Mohd._Faisal_Sulong%40A_Rashid.pdf)
5. Julia Lawless, author, The Illustrated Encyclopedia Of Essential Oils, Barnes and Noble Books, New York, 1995, p155
6. Gavin andrews, m.d generalized worry disorder: a review of dsm-iv, depression and anxiety 0 : 1–14 (2010), available from; <http://www.dsm5.org/Research/Document/Andrews%20et%20alGeneralized%20Worry%20Disorder.pdf>
7. Br J Med Psychol, Hamilton M.The assessment of anxiety states by rating 1959;32:50–55.Available from;[https://pubmed.ncbi.nlm.nih.gov/assets/crfs/Hamilton%20Anxiety%20Rating%20Scale%20\(HAM-A\).pdf](https://pubmed.ncbi.nlm.nih.gov/assets/crfs/Hamilton%20Anxiety%20Rating%20Scale%20(HAM-A).pdf)
8. K.R.Srikantha Murthy, Editor, Bhavaprakasha of Bhava Mishra, pushpavarga chapter, 2nd edition, Varanasi: Krishnadas Academy; 2001, p 491
9. AcharyaYadavjiTrikamji, editor,CharakaSamhita of charaka, sutrasthana, 8<sup>th</sup> chapter, verse no18, 5th Ed, Varanasi: ChoukhambhaPrakashana, 2007, p 58
10. Anna moreshwarakunte, editor, ashtangahridaya of vagbhata,sutrasthana, 13<sup>th</sup> chapter, verse no5, Choukhambha Prakashana2010, p 212
11. Aswini Dutt. R, The Rationale behind wearing strings of Jasmine flower by the lactating South Indian Women, Iranian Journal of Medical Hypotheses and Ideas, 2011, available from;[http://journals.tums.ac.ir/upload\\_files/pdf/\\_/18171.pdf](http://journals.tums.ac.ir/upload_files/pdf/_/18171.pdf)
12. PhanukitKunhachan, Chemical Composition, Toxicity and Vasodilatation Effect of the Flowers Extract of Jasminumsambac (L.) Ait. “G. Duke of Tuscany, Evidence-Based Complementary and Alternative Medicine Volume 2012 (2012), Article ID 471312, 7 pages, available from;<http://www.hindawi.com/journals/ecam/2012/471312/>
13. M. Iqbal, Antifertility activity of the floral buds of Jasminumofficinale var.grandiflorum in rats, phytotherapy research, 18 JAN 2006, available from; <http://onlinelibrary.wiley.com/doi/10.1002/ptr.2650070103/abstract>

Cite this article as: Arhanthkumar A., Sapna D., Arun Chandran R., Shreevathsa, effect of jasmine essential oil in generalized anxiety disorder: a pilot clinical study, Journal of Ayurveda and Holistic Medicine;2013;1(7): 1-6

Source of support: Nil, Conflict of interest: None Declared.