

## Clinical Comparative Study in the Management of Anxiety Disorders w.s.r. Chittodvega

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### Abstract

Anxiety disorder is the challenging health problem worldwide. Mental health disorders are complex and can take many forms so it is the need of the hour to take proper steps to avoid them and develop a proper solution. Mental health problems may lead to other health challenges in future such as hypertension, diabetes and autoimmune disorders etc. Psychology and psychiatric stakeholders are doing their best but still there is some un-satisfaction due to incomplete therapy and side effects due to antipsychotic drugs.

Health care systems as well patients are looking for other alternative therapies which are complete, noninvasive, minimal use of medications and without any side effects.

*Shirodhara* and Yoga are such alternatives which have been proved their efficacy in mental health disorders and can be introduced as main therapy for the treatment of anxiety disorders worldwide but they need to be explored more in terms of efficacy, patients comfort and acceptance.

Present study deals with comparison of these two Non pharmacological Ayurveda based treatment in management of Anxiety disorders w.s.r. Chittodvega. For this study *Shirodhara* and *Bhramari Pranayama* were taken for comparative study in patients suffering from anxiety disorders. It was found that both were effective in anxiety disorders but *Shirodhara* gave better relief in panic attack and phobic disorder while *Bhramari Pranayama* is more useful in generalized anxiety disorder.

**Keywords:** Shirodhara; Tail Dhara; Chittodvega; Bhramari; Pranayama; Anxiety Disorder.

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### Introduction

Ayurveda, which is the science of life, also called an eternal science, deals with spiritual, psychological and physical wellbeing of the individual. It covers all spheres of life as is clear from the definition of *swastha*.

The anxiety disorders looks very simple but if we measure impairment of social and occupational functioning, people with this disease are significantly worse off than people with any other chronic medical illness. The modern medical

treatment of this disease requires long term use of sedative, hypnotic and anxiolytic drugs, which may lead to the side effects like drowsiness, impaired motor function, and loss of memory, allergic reaction, and anti-social behavior. Status of anxiety disorder research from India in relation to epidemiology, phenomenology, course, outcome and management are lacking. Research areas like family studies, genetics, and neurobiology are not touched adequately. Most of the studies have tried to replicate the findings from the West.

In 2017, 197.3 million people had mental disorders in India, including 45.7 million with depressive disorders and 44.9 million with anxiety disorders. One in seven Indians was affected by mental disorders of varying severity in 2017. The proportional contribution of mental disorders to the total disease burden in India has almost doubled since 1990. The contribution of mental disorders to the total 'disability adjusted life years (DALYs)' in India increased from 2.5% in 1990 to 4.7% in 2017. In 2017, depressive disorders contributed the most to the total mental disorders DALYs (33.8%), followed by anxiety disorders (19.0%), idiopathic developmental intellectual disability (IDID; 10.8%), schizophrenia (9.8%), bipolar disorder (6.9%), conduct disorder (5.9%), autism spectrum disorders (3.2%), eating disorders (2.2%), and attention deficit hyperactivity disorder (ADHD; 0.3%); other mental disorders comprised 8.0% of DALYs.<sup>1</sup>

*Cittodvega* is a Manasavikara described by Charaka<sup>2</sup> has been considered as a perfect word for highlighting the status of anxiety. Various Ayurveda texts have also described many terms related to mental status viz. *Citta-vibhramsa*, *Cittanasa*, *Citta-vibhrama*, *Citta-viparyaya*, *Anavasthita Citta* etc. but, *Cittodvega* seems to be more appropriate for the anxiety disorder. The etymology of *Cittodvega* clearly indicates the anxious status of mind. Ayurvedic literature has described *Cittodvega* and its influence on body while describing other diseases also. On the basis of these considerations it can be postulated that *Cittodvega* is a minor mental disorder. In modern parlance also, the neurotic disorders, which include anxiety disorders are considered as minor mental disorder in comparison to major mental entities like schizophrenia etc.

Yoga has been considered as *Chittoratti Nirodha*.<sup>3</sup> Yoga is known to cure mental disorders by regular practice. One of the yoga modality, *Bhramari Pranayama* is a slow breathing technique and can be practiced irrespective of the age and gender.<sup>4,5</sup> So *Bhramari Prayanam* has been taken for this study to assess the efficacy in anxiety disorders. Its effect has been compared with already proved procedure in anxiety disorders i.e. *Shirodhara*.<sup>6,7</sup> *Dravya* chosen for *Shirodhara* is *Til Tail*.

### Aims

- To study the etio-pathogenesis of *Cittodvega* vis-à-vis anxiety disorders on the Ayurvedic terms.
- To evaluate the role of *Tail dhara* in the

management of *Cittodvega* (anxiety disorders.)

- To evaluate the role of *Bhramari* in the management of *Cittodvega* (anxiety disorders).
- To compare efficacy of both the therapies for the management of *Cittodvega* (anxiety disorders).

### Patients and Methods

36 patients of *Cittodvega* were selected from O.P.D. & I.P.D. sections of *Kayachikitsa* Department and *Swasthwritt & Yoga*, G S Ayurveda Medical College & Hospital, Pilkhuwa. Detailed history and physical and mental examinations were done on the basis of specialized Performa prepared for this purpose. Diagnosis was done on the basis of following criteria.

### Criteria for diagnosis

- DSM IV (Diagnostic and Statistical Manual of Mental Disorders) diagnostic criteria for various anxiety disorders were primarily adapted.
- All the signs and symptoms of *Cittodvega* and anxiety disorder as well as mentioned in Hamilton scale were taken into consideration.
- Pulse, respiration and blood pressure were checked to assess the present condition of the disease. Routine blood, urine and stool examinations were performed to exclude other pathogenesis.

### Plan of Study

All the 36 patients of *Cittodvega* (Anxiety disorders) were randomly divided into the following two groups:

#### *Tail Dhara group (T- Group):*

The patients of this group were subjected to *Tail dhara* for 30 minutes daily in the morning between 8:00 am to 9:00 am for 4 weeks .

Lukewarm *Til tail* was used for *Tail dhara*.

*Materials and method of Tail dhara in detail are as follows:*

#### *Purvakarma*

The patient is asked to response his natural calls before lying on *Dhara* table. The patients is allowed only to take tea, if they are addicted to it. The patient is asked to lie down in supine position on *Dhara* table with his head resting on slightly elevated wooden platform made on the table. Then both the eyes are covered with cotton piece. The patient's pulse, respiration and blood pressure are recorded

before starting the *Taildhara*. Massage is done over the head and scalp properly using an adequate quantity of oil 5 to 10 minutes before starting the procedure. A small pillow or towel is kept under the neck for proper support. Shirodhara pot or equipment is finely tuned in such a way, so that the oil from the pot falls directly onto the forehead. The specific distance here, between the Shirodhara pot and the forehead is kept to be about 10 cm.

### **Pradhana Karma**

#### *Procedure*

- Put *Til Tail* in the *Shirodhara* pot and start pouring oil over the head and forehead of the patient.
- Ask the patient to relax and relish the feeling coming from the oil being sprinkled onto the head.
- The oil coming out of the *Shirodhara* pot should be in continuous motion.
- Oscillate or waver the pot from one side to another side of the forehead, so that the stream of oil goes from left to right, lateral part of the forehead and vice versa.
- Recollect the extra oil that has fallen from the forehead, on the table; reheat it to maintain the specific temperature of the *Shirodhara* oil.
- Put the recollected oil back into the *Shirodhara* pot and again allow the oil to fall from the *Shirodhara* pot onto the forehead.
- Give a light head massage to the patient throughout the process.
- Continue this process for 20 to 30 minutes.

### **Pascat Karma**

- After the *Shirodhara* when massage is completed, wipe off the oil or liquids from the forehead of the patient.
- Allow the patient to relax for 30 to 60 minutes and allow the oil to seep deep inside the head
- Pulse, respiration and blood pressure are again recorded.
- Then patient is asked to sit in the room for some time before leaving the *Dhara* room.
- This sitting was repeated once daily for 28 days.

**Bhramari Group<sup>8</sup> (B-Group):** Patients of this group were asked to do *Bhramari Pranayam* early morning after passing stools.

- Sit in a quiet and well ventilated corner and close your eyes.

- Place your index fingers on your ears right at the cartilage.
- Breathe in and while breathing out press the cartilage with your fingers. Keep the cartilage pressed while making a loud humming sound like a bee.
- Breathe in again and out and continue the same pattern for around 6-7 times.

During the trial period, the patients were asked to take their routine diet.

### **Criteria for Assessment**

The patients of both the groups were examined daily at the end of the week, their improvement in signs and symptoms were noted. Improvement in all the signs and symptoms as per Hamilton's anxiety rating scale was assessed. Hamilton (1959) has described 14 types of clinical features of anxiety status, the details of which are as follows:

Signs and symptoms mentioned in Hamilton scale<sup>9</sup> were assessed by adopting the following scoring system.

| Degree of anxiety & Pathological condition | Scoring |
|--------------------------------------------|---------|
| None                                       | 0       |
| Mild                                       | 1       |
| Moderate                                   | 2       |
| Severe                                     | 3       |
| Severe, grossly disabling                  | 4       |

Other chief complaints like phobia, obsession, compulsion, etc. were scored as per above pattern. Pulse, respiration and blood pressure of all the patients of *Tail dhara* group and *Bhramari* group were recorded before and after the therapy every day.

### **Overall effect of therapy**

Overall effect of the therapy was assessed in terms of complete remission, marked improvement, moderate improvement, improvement and unchanged by adopted the following criteria.

**Complete remission:** 100% relief in the Hamilton's anxiety rating scale was considered as complete remission.

**Marked improvement:** More than 75% reduction in the score of the Hamilton's anxiety rating scale was taken as marked improvement.

**Moderate improvement:** 50% to 75% improvement in the Hamilton's anxiety scoring pattern was recorded as moderate improvement.

*Improvement:* 25% to 50% improvement in the Hamilton's anxiety rating scale was considered as improvement.

*Unchanged:* Less than 25% reduction in the Hamilton's anxiety rating scale was noted as unchanged.

**Table 1:** Treatment Groups Wise Distribution of 36 Patients of Chittodvega.

| Type        | No. of Patients |          |       | %    |
|-------------|-----------------|----------|-------|------|
|             | T- Group        | T- Group | Total |      |
| Complete    | 8               | 12       | 20    | 55.5 |
| L. A. M. A. | 5               | 11       | 16    | 44.5 |

**Table 2:** Effect of Tail dhara on Psychic Complaints in the 8 Patients of Chittodvega.

| Psychic Complaints    | Mean Score |      | % Relief | S.D. (±) | S.E. (±) | t     | P       |
|-----------------------|------------|------|----------|----------|----------|-------|---------|
|                       | B.T.       | A.T. |          |          |          |       |         |
| Anxiety               | 3.75       | 1.13 | 70       | 0.52     | 0.18     | 14.34 | < 0.001 |
| Irritability          | 3.38       | 0.86 | 74.07    | 0.76     | 0.27     | 9.35  | < 0.001 |
| Inability to relax    | 3.5        | 0.75 | 78.57    | 0.71     | 0.25     | 11    | < 0.001 |
| Lack of concentration | 1.75       | 0.63 | 64.29    | 0.99     | 0.35     | 3.25  | < 0.05  |
| Loss of interest      | 2.38       | 0.5  | 78.95    | 1.25     | 0.44     | 4.25  | < 0.01  |
| Disturbed sleep       | 3.5        | 1    | 71.42    | 1.2      | 0.42     | 5.92  | < 0.001 |
| Obsessions            | 0.88       | 0.25 | 71.42    | 1.19     | 0.42     | 1.48  | > 0.05  |
| Compulsion            | 0.38       | -    | 100      | 1.06     | 0.38     | 1     | > 0.05  |
| Phobia                | 0.38       | -    | 100      | 1.06     | 0.38     | 1     | > 0.05  |
| Depression            | 2.25       | 0.5  | 77.78    | 1.16     | 0.41     | 4.25  | < 0.01  |
| Loss of memory        | 1          | 0.63 | 37.5     | 0.52     | 0.18     | 2.05  | > 0.05  |
| Fear                  | 1.63       | 0.38 | 83.33    | 1.16     | 0.41     | 3.03  | < 0.05  |

**Table 3:** Effect of Tail dhara on Somatic Complaints in the 8 Patients of Chittodvega.

| Somatic Complaints    | Mean Score |      | % relief | S.D. (±) | S.E. (±) | t     | P       |
|-----------------------|------------|------|----------|----------|----------|-------|---------|
|                       | B.T.       | A.T. |          |          |          |       |         |
| Palpitation           | 1.88       | 0.25 | 86.67    | 1.41     | 0.5      | 3.26  | < 0.05  |
| Breathlessness        | 1.63       | 0.38 | 76.92    | 1.16     | 0.41     | 3.03  | < 0.05  |
| Chest pain/discomfort | 2.13       | -    | 100      | 1.36     | 0.48     | 4.44  | < 0.01  |
| Giddiness             | 1.38       | -    | 100      | 1.51     | 0.53     | 2.58  | < 0.05  |
| Headache              | 3.63       | 0.63 | 82.76    | 0.76     | 0.27     | 11.22 | < 0.001 |
| Muscular ache         | 2.63       | 0.63 | 76.19    | 0.53     | 0.19     | 10.58 | < 0.001 |
| Dry mouth             | 2.25       | 0.75 | 66.67    | 0.93     | 0.33     | 4.58  | < 0.01  |
| Exhaustion            | 2.63       | 0.88 | 66.67    | 1.16     | 0.41     | 4.25  | < 0.01  |
| Upset stomach         | 3.38       | 1.75 | 48.15    | 0.52     | 0.18     | 8.88  | < 0.001 |
| Restlessness          | 3.13       | 0.75 | 76       | 1.19     | 0.42     | 5.66  | < 0.001 |

**Table 4:** Effect of Tail dhara on Hamilton Scale in the 8 Patients of Chittodvega.

| T - Group | Mean Score |      | % Relief | S.D. (±) | S.E. (±) | t     | P       |
|-----------|------------|------|----------|----------|----------|-------|---------|
|           | B.T.       | A.T. |          |          |          |       |         |
|           | 2.58       | 0.84 | 67.49    | 0.34     | 0.12     | 14.42 | < 0.001 |

Table 5: Effect of *Tail dhara* on the Vital Data in the 8 Patients of *Cittodvega*.

| Vital Data             | Mean Score |        | % Relief | S.D. (±) | S.E. (±) | t     | P       |
|------------------------|------------|--------|----------|----------|----------|-------|---------|
|                        | B.T.       | A.T.   |          |          |          |       |         |
| Pulse (/Minute)        | 74.62      | 66     | 11.55    | 2.5      | 0.89     | 9.74  | < 0.001 |
| Respiration (/Minute)  | 20.25      | 16.63  | 17       | 3.16     | 1.12     | 3.25  | < 0.05  |
| Systolic B. P. (mm-Hg) | 132.5      | 118.25 | 10.75    | 10.39    | 3.67     | 32.19 | < 0.001 |
| Diastolic B.P. (mm-Hg) | 83.25      | 78.5   | 5.7      | 4.4      | 1.56     | 3.05  | < 0.05  |

Table 6: Overall Effect of *Tail dhara* in the 8 Patients of *Cittodvega*.

| Overall Effect       | No. of Patients |       | %    |
|----------------------|-----------------|-------|------|
|                      | T               | Group |      |
| Complete remission   | -               | -     | -    |
| Marked improvement   | 1               | -     | 12.5 |
| Moderate improvement | 7               | -     | 87.5 |
| Improvement          | -               | -     | -    |
| Unchanged            | -               | -     | -    |

Table 7: Effect of *Bhramari Pranayam* on Psychic Complaints in the 12 Patients of *Cittodvega*.

| Psychic Complaints    | Mean Score |      | % Relief | S.D. (±) | S.E. (±) | t     | P       |
|-----------------------|------------|------|----------|----------|----------|-------|---------|
|                       | B.T.       | A.T. |          |          |          |       |         |
| Anxiety               | 3.75       | 0.83 | 77.78    | 0.51     | 1.15     | 19.62 | < 0.001 |
| Irritability          | 2.75       | 0.58 | 78.79    | 1.4      | 0.41     | 5.34  | < 0.001 |
| Inability to relax    | 3.33       | 0.58 | 82.5     | 1.06     | 0.3      | 9.02  | < 0.001 |
| Lack of concentration | 1.5        | 0.33 | 77.78    | 1.11     | 0.32     | 3.63  | < 0.01  |
| Loss of interest      | 2.92       | 0.75 | 74.29    | 1.19     | 0.34     | 6.29  | < 0.001 |
| Disturbed sleep       | 2.83       | 0.42 | 85.29    | 1.56     | 0.45     | 5.35  | < 0.001 |
| Obsessions            | 0.58       | 0.17 | 71.43    | 0.99     | 0.29     | 1.45  | > 0.05  |
| Compulsion            | 0.58       | 0.17 | 71.43    | 0.99     | 0.29     | 1.45  | > 0.05  |
| Phobia                | 1          | 0.42 | 58.33    | 0.9      | 0.26     | 2.24  | < 0.05  |
| Depression            | 1.75       | 0.42 | 76.19    | 1.5      | 0.43     | 3.08  | < 0.05  |
| Loss of memory        | 1.66       | 0.75 | 55       | 0.79     | 0.23     | 4     | < 0.01  |
| Fear                  | 1.58       | 0.75 | 52.63    | 0.83     | 0.24     | 3.46  | < 0.01  |

Table 8: Effect of *Bhramari Pranayam* on Somatic Complaints in the 12 Patients of *Cittodvega*.

| Somatic Complaints    | Mean Score |      | % Relief | S.D. (±) | S.E. (±) | t     | P       |
|-----------------------|------------|------|----------|----------|----------|-------|---------|
|                       | B.T.       | A.T. |          |          |          |       |         |
| Palpitation           | 1.33       | 0.17 | 87.5     | 1.27     | 0.37     | 3.19  | < 0.01  |
| Breathlessness        | 0.92       | 0.25 | 72.72    | 0.98     | 0.28     | 2.35  | < 0.05  |
| Chest pain/discomfort | 1.17       | 0.25 | 78.57    | 0.99     | 0.29     | 3.18  | < 0.01  |
| Giddiness             | 0.75       | 0    | 100      | 1.14     | 0.32     | 2.28  | < 0.05  |
| Headache              | 3.33       | 0.33 | 90       | 0.74     | 0.21     | 14.07 | < 0.001 |
| Muscular ache         | 2.08       | 0.58 | 72       | 0.9      | 0.26     | 5.74  | < 0.001 |
| Dry mouth             | 1.92       | 0.58 | 69.56    | 1.07     | 0.31     | 4.3   | < 0.01  |
| Exhaustion            | 2.58       | 1    | 61.29    | 0.9      | 0.26     | 6.09  | < 0.001 |
| Upset stomach         | 2.92       | 1.33 | 54.29    | 0.79     | 0.23     | 6.92  | < 0.001 |
| Restlessness          | 3.58       | 0.75 | 79.07    | 0.83     | 0.24     | 11.76 | < 0.001 |

**Table 9:** Effect of *Bhramari Pranayam* on Hamilton Scale in the 12 Patients of *Cittodvega*.

| B- Group | Mean Score |      | % Relief | S.D. (±) | S.E. (±) | t     | P       |
|----------|------------|------|----------|----------|----------|-------|---------|
|          | B.T.       | A.T. |          |          |          |       |         |
|          | 2.4        | 0.69 | 72.06    | 0.4      | 0.11     | 15.05 | < 0.001 |

**Table 10** Effect of *Bhramari Pranayam* on the Vital Data in the 2 Patients of *Cittodvega*.

| Vital Data             | Mean Score |        | % Relief | S.D. (±) | S.E. (±) | t     | P       |
|------------------------|------------|--------|----------|----------|----------|-------|---------|
|                        | B.T.       | A.T.   |          |          |          |       |         |
| Pulse (/Minute)        | 77.42      | 71.92  | 6.57     | 1.88     | 0.54     | 10.12 | < 0.001 |
| Respiration (/Minute)  | 19.42      | 16.75  | 13.73    | 1.37     | 0.4      | 6.74  | < 0.001 |
| Systolic B. P. (mm-Hg) | 123.83     | 116.83 | 5.65     | 2.17     | 0.63     | 11.15 | < 0.001 |
| Diastolic B.P. (mm-Hg) | 80.17      | 77.33  | 3.53     | 2.17     | 0.63     | 4.52  | < 0.001 |

**Table 11:** Overall Effect of *Bhramari Pranayam* in the 12 Patients of *Cittodvega*.

| Overall Effect       | No. of Patients | %    |
|----------------------|-----------------|------|
|                      | B - Group       |      |
| Complete remission   | -               | -    |
| Marked improvement   | 5               | 41.7 |
| Moderate improvement | 7               | 58.3 |
| Improvement          | -               | -    |
| Unchanged            | -               | -    |

### Overall Effect

In this study 12.5% patients gained marked improvement and 87.5% patients showed moderate improvement in *Tail dhara* group. In *Bhramari Pranayam* group 41.7% patients showed marked improvement and 58.3% showed moderate improvement. Hence, *Bhramari Pranayam* was better than *Tail dhara* in providing overall improvement.

### Probable Mode of Action of *Tail dhara*

*Tail dhara* is continuous pouring of lukewarm *til tail* to the forehead and is an effective treatment for reducing stress and expanding one's consciousness. Due to *tikshana, vyavayi & sukshma* property of *til tail* it penetrates easily into *manovaha srotas* correcting vitiation of *manas dosha* (*Raja & Tama*).

The mind, body and spirit are intimately connected, and *Tail dhara* by calming the stressful mind, relaxes the entire physiology. Imbalance of *Prana, Udana and Vyana Vayu, Sadhaka Pitta and Tarpaka Kapha* can produce stress and tension. *Tail dhara* re-establishes the functional integrity between these three subtypes of *Dosha* through its mechanical effect. *Sahasra Chakra* is the seat

of pituitary and pineal gland. As we know, the pituitary gland is one of the main glands of the endocrine system. *Tail dhara* stimulates the pituitary gland by its penetrating effect, which helps in bringing the hormonal balance.

### Probable Mode of Action of *Bhramari Pranayam*

Unlike other *pranayama* practices, in *Bhramari Pranayama*, acoustic vibration is produced by humming sound during the exhalation phase along with the yogic posture. This acoustic vibration could have significant impact in producing the desired effect. Since, for brain we don't have any stretching exercises like other parts of the body, vibration of head is a good alternative for that and vibration by one's own voice might not be harmful for the brain tissues. The *Bhramri Pranayam* has been proved that it reduces sympathetic activity<sup>10</sup>, enhances parasympathetic activity, enhances homeostasis leading to release of DHEA and Serotonin. Hence it is evident that it influences multiple systems in the body and there is definitely a scope to have desirable effects on respiratory system, autonomic nervous system, stress, anxiety level, over all emotional status of the practitioner etc. At a deeper level, the studies could even focus on the effect of *Bhramri Pranayam* on stress markers (Cortisol, alpha amylase, MDA etc.) too. However there is a need to focus on strengthening the methodology and study designs for more valid and reliable result. RCTs are universally accepted top rated study design due to its high degree of reproducibility.

### Conclusion

The comparison of the results of both the group shows that *Tail dhara* provided better relief in loss

of interest, depression, fear, phobia, obsession, compulsion, chest pain/discomfort, breathlessness, muscular ache and exhaustion. While *Bhramari Pranayam* provided comparatively improvement than *Tail dhara* in anxiety, irritability, inability to relax, lack of concentration, disturbed sleep, loss of memory, palpitation, headache, dryness of mouth, upset stomach and restlessness.

Hence, it can be stated that *Tail dhara* gave better relief in panic attack and phobic disorder while *Bhramari Pranayam* is more useful in generalized anxiety disorder.

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