

AN EXPLORATORY STUDY TO ASSESS THE EFFICACY OF PRANAYAMA FROM “KUMBHAK PADDHATI TEXT” IN ANXIETY NEUROSIS OF WORKING WOMEN.

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ABSTRACT:

Background: Anxiety neurosis is seen commonly in middle age people. Stress is main reason for it. Persistent stress affects body and mind resulting in *Rasavaha* and *ManovahaSrotasdushti*. In balancing both professional and family life every working woman faces mild to moderate stress. Recurrent stress induction leads to abnormal changes resulting in disability to perform daily work efficiently. Pranayama can be beneficial in the management of anxiety neurosis in working women.

Purpose: to asses the Efficacy of *Pranayama* from “KumbhakPaddhati Text” in Anxiety Neurosis of Working Women

Methods: In this exploratory clinical study, *Pranayama* techniques selected from “KumbhakPaddhati” textbook of AacharyaRaghuveera were asked to practice 25 working women diagnosed with Anxiety Neurosis for continuous 42 days. Hamilton Anxiety Rating Scale (HMA-A) and The Galvanic Skin Response (GSR) Test were the criteria for assessment. Appropriate statistical tests were applied to data to draw inferences.

Results: Assessment of both the clinical parameters showed that these selected *Pranayama* procedures showed significant results in relieving the anxiety neurosis in working women. No adverse events were reported during or after the study period.

Conclusion – From the observations it can be concluded that selected types of *Pranayama* are effective in the management of Anxiety neurosis. In future larger studies are needed to confirm these findings.

Keywords – *Pranayama*, Anxiety Neurosis.

Introduction:

Anxiety, depression, obsessional thoughts, and various vague physical symptoms are experienced by many people in response to the stress and strain of everyday life.¹ In neurotic disorders, these symptoms become more intense and prolonged and are out of proportion to the severity of the stress. Anxiety is a vague feeling of apprehension accompanied by one or more body sensations. As an alerting signal, anxiety is a normal and useful emotion since it prompts the individual to take necessary action to prevent the threat or minimize its consequence.² Episodic anxiety without disorder of mood (i.e. depression) is usually

classified as anxiety neurosis, with somatic symptoms such as palpitations, paraesthesia, weakness, dizziness, pessimism, and irritability.³

In present era, women experience noticeably greater prevalence of anxiety disorders than men, including anxiety neurosis, generalized anxiety disorder (GAD), panic disorder, etc. Anxiety disorders are characterized by anxious apprehension or fear in response to a perceived threat.⁴ Anxiety or anxious apprehension is a future-oriented state in which one is concerned about potential threats, whereas fear occurs in response to an immediate threat. Anxiety disorders among women often precipitate or worsen at times of hormonal fluctuation, including puberty, the prepartum, pregnancy or postpartum, and the menopausal transition. Anxiety neurosis is very common in working women due to stress.⁵ Nowadays, lifestyle disorders are increasing day-by-day affecting physical and psychological health of human beings.

Neurosis due to Anxiety is one of the common psychosomatic disorders, affecting physical and mental health. According to Ayurveda, anxiety neurosis can be considered with *Chittodwega* which involves *Rasavaha* as well as *ManovahaSrotas*

Anxiety neurosis is usually treated with psychological and or pharmacological therapies. psychological management is done by general or supportive psychotherapy, behaviour therapy, cognitive therapy etc, and pharmacological therapy is by drug administration usually by oral route. While prescribing these psychotropic drugs, special care must be taken & hence usually not administered initially due to its known side effects. On the other side, non-pharmacological treatments such as *Pranayama* can be one of the preferred modes of treatment prescribed in ancient classical texts which can be used in initially without any side effects or complications and economically feasible.

Pranayama is one of the most popular practices of Yoga. As breathing process and mind-body activities are correlated with each other, practices of *Pranayama* are beneficial in treating psychosomatic disorders.⁶ Extension or expansion of breathing is called as *Pranayama*. *PurakaKumbhaka* and *Rechaka* are three basic components of *Pranayama*.⁷ Acharya Raghuvira has written manuscripts on *Pranayama*, and collection of all of them is called as 'KumbhakPaddhati'- Science of Pranayama.⁸ Therapeutic applications of *Pranayama* practices and its importance have been proved through various research studies.⁹⁻¹⁰ But application of different types of *Pranayama*, mentioned in *KumbhakPaddhati* text are yet to be studied. Previously only psychotherapy was used to treat these anxiety patients. But now many researches on application of Yoga in anxiety neurosis have been published, proving the fact of efficacy of Yoga in it.

Keeping all these views in mind, a pilot study entitled “**An Exploratory Study to assess the Efficacy of Pranayama from “KumbhakPaddhati Text” in Anxiety Neurosis of Working Women**” was conducted and results were presented according to the data generated through this study.

Materials & Methods-

- Study design and site:
This exploratory clinical study was carried out at D. Y. Patil deemed to be university School of Ayurveda, Nerul, Navi Mumbai – 400 706, Maharashtra state.
- Ethical considerations:
Ethical approval from Institutional ethics committees for Ph. D. research work was obtained.
- Materials:
Literature available on KumbhakPaddhati, textbooks and research publications available on therapeutic effect of *Pranayama*, previous research work available on *Pranayama* and anxiety neurosis were studied.

- Enrolment of study participants- Married female patients suffering from anxiety neurosis visiting OPD of the study centers and who consented, were considered for the study.
- Inclusion Criteria: Married female individuals between the age group of 25 to 45 years both inclusive, non - pregnant at the time of study and working who were diagnosed with Anxiety Neurosis included in the study. Subjects who were ready to provide written informed consent and who were ready to willingly participate, practise Pranayama and follow the protocol requirements of the clinical study were included in the study.
- Exclusion criteria – Pregnant females or females diagnosed with other systemic disorders or taking medicines for the ailments and not willing to do Pranayama regularly and follow up were excluded from the study. Other conditions, which in the opinion of the investigators, makes the patient unsuitable for enrolment or could interfere with his participation in the study were also excluded from the study.

Sample size: A total of 25 working female patients suffering from anxiety neurosis were enrolled in the cross-sectional study.

- **Methodology –** For this exploratory clinical study, types of *Pranayama* were selected from “Kumbhak Paddhati” textbook and time required for doing it was calculated. For this study, *Sahita, Vyanvayu, Bhramari, Murcchana and Kakchanchukumbhak Kriya* were selected from the textbook.¹¹

25 working women diagnosed with Anxiety Neurosis and who attended at least 80% of total Pranayama sessions were selected. For diagnosis of anxiety in the participants, Hamilton Anxiety Rating Scale (HMA-A) was used and final diagnosis was done with the help of Clinical Psychiatricians. Prior to the study written informed consent form was taken from every patient, participating in clinical study. Following Lab investigations of every patient were done to rule out any other associated disorder – CBC, Blood sugar (R), TFT etc. Also, heart rate, respiratory rate, blood pressure, body weight, body temp and ECG of every patient were observed prior to the study.

- **Intervention –** Selected types of Pranayama were taught to everyone participating in the study and follow up were taken on 7th, 21st, 42nd day. All *pranayama* sessions were conducted in morning between 7-8am. Time required for doing *Pranayama* was 20mins as follows -

- *Sahit Kumbhak Kriya*- 5 minutes
- *Vyan Vayu Kumbhak Kriya*- 5 minutes
- *Bhramari Kriya* - 2 minutes
- *Murcchana Kumbhak* - 3 minutes
- *Kak Chanchu Kumbhak* - 2 minutes followed by relaxation for 2 minutes

On every follow up improvement in breath holding capacity (with number counting – *Matra Kumbhak*), no of breathing were observed.

Total duration of the study was 6 weeks (42 days).

- **Parameters for Assessment:**

1) **Hamilton Anxiety Rating Scale (HMA-A):**¹²

This scale was used to assess severity of symptoms of anxiety.

Scoring: Each item is scored on scale of 0 (not present) to 4 (severe), with a total score range of 0-56, where score less than 17 indicates mild severity, 18-24 indicates mild to moderate severity and 25-30 indicates severe anxiety neurosis. Below is a list of phrases that describe certain feeling that people have, Rate the patients by finding the answer which best describes the extent to which he / she has these conditions. Select one of the five responses for each of the fourteen questions.

0= Absent, 1= Mild, 2 = Moderate, 3= Severe and 4= Very Severe

2) **The Galvanic Skin Response (GSR) Test:**¹³

The Galvanic Skin Response (GSR) is defined as a change in the electrical properties of the skin. The signal can be used for capturing the autonomic nerve responses as a parameter of the sweat gland function. The response appears as an increase in the electrical conductance of the skin (a decrease in resistance) across the palms of the hands or soles of the feet. The PGR (psychogalvanic reflex) is mediated by the sympathetic division of the autonomic nervous system. The PGR is essentially involuntary, although people can be taught to control it somewhat via biofeedback training. As a detector of emotion, the response often has served as one of the indicators in the lie detector, along with blood pressure, pulse, and respiration. The galvanic skin resistance (GSR) is an accessible & sensitive index of peripheral sympathetic nervous activity, reflecting peripheral autonomic change. (Ref:)

• **Plan for Statistical Analysis:**

The study data generated and collected was put to statistical analysis to reach to the final results and conclusions. The demographic data were presented in tables and graphs. The data obtained in the studies were subjected to tests of significance. GraphPad InStat (www.graphpad.com) software was used for statistical analysis of data. For Intra-Group Comparison: Students' paired t – test was applied if data passed normality test (K – S test) for single sample correlated observations. Wilcoxon matched-pairs signed-ranks test was applied if data failed normality test (K - S test) for single sample correlated observations. P value < 0.05 was considered significant.

Results:

Total 25 participants were enrolled in the present study. Their demographic details and details of clinical assessment are as follows:

Demographic details:

Out of total 25 study participants, 92 participants were below 25 years of age whereas only 08 participants were in 25 – 45 years of age with the average of 21.8 ± 1.70 years.

Assessment of Clinical Parameters:

Hamilton Anxiety Rating Scale (HMA-A):

The mean HMA – S scale readings before treatment were 22.6 ± 1.83 with median 23 (range 19 – 25). The mean HMA – S scale readings after treatment were 5.92 ± 2.00 with median 23 (range 19 – 25). The difference in HMA – S scale readings over a treatment of 42 days was found to be statistically significant ($p < 0.0001$).

The Galvanic Skin Response (GSR) Test:

The mean GSR scale before treatment were 1.6 ± 0.51 with median 02 (range 01 – 02). The mean GSR scale readings after treatment were 0.36 ± 0.49 with median 00 (range 00 – 01). The difference in GSR scale readings over a treatment of 42 days was found to be statistically significant ($p < 0.0001$).

Assessment of both the clinical parameters showed that these selected Pranayama procedures showed significant results in relieving the anxiety neurosis in working women. No adverse events were reported during or after the study period.

Discussion:

Experiencing occasional anxiety is a normal part of life. However, people with anxiety disorders frequently have intense, excessive and persistent worry and fear about everyday situations. Many a times people can't handle their emotions, get very angry, frustrated, depressed and anxious on small things. Often, anxiety disorders involve repeated episodes of sudden feelings of intense anxiety and fear or terror that reach a peak within minutes (panic attacks). There is no self-awareness & self-management so it leads to wrong decisions in important period of their life.

In practice, *Pranayama*, i.e. breathing exercises are helpful to have better control over activities of mind. Sage Patanjali described the eight limbs of *Ashtanga Yoga* in order to achieve this realization. This present study suggests that, 6 weeks practice of *Pranayama* is having several benefits in Anxiety Neurosis patients. Median values subjective parameter data are decreased from 23 to 6 and for objective parameter from 2 to 0. This shows that *Pranayama* is having significant effect in Anxiety neurosis patients to reduce stress level and associated symptoms. At the 42nd weeks of the study, improvements in performing Kumbhak Kriya (breath holding capacity), mind concentration, control over emotions, reaction to situation etc. seen. In this whole study, there were no any side effects seen in relation to *Pranayama* sessions. Many researches proved the significant role of Yoga in Anxiety Neurosis management. Previously symptomatic treatment, anti-depressants counseling sessions are used to treat this condition. Now therapeutic aspect of Yoga is showing positive benefits in the management of anxiety disorders.

Mechanism of *Pranayama* benefits with Ayurvedic and modern perspective can be given as follows –

Anxiety Neurosis is one of the psychosomatic disorders which can be correlated with *Rasavaha Srotas Dushti Lakshna* along with *Manovaha Srotas Dushti Lakshana*. *Dushta Vata Dosha* and *Pitta Dosha* are responsible for *Rasavaha Srotas – Hridaya* and *Dash Dhamanyadushti*. *Pranayama* is beneficial for *Hridaya*, lowering *Vata* and *Pitta Dosha Dushti Lakshana* is helpful in treating Anxiety Neurosis patients. Practices of *Pranayama* help in mind concentration, enhances work of neurotransmitters, and enhances cortico-limbic cells which collectively result in reducing stress level. Simple *Pranayama* practices are beneficial in reducing acute stress within 15 minutes and reversing pathology of many psychosomatic diseases.¹⁴⁻¹⁷

Limitations: It is a single-center study with small number of patients with short follow up. By the nature of intervention, the study could not be blinded. Hence, a placebo effect of *Pranayama* cannot be excluded. However, in spite of these limitations, the variables appear significant and are likely to be clinically important. This small pilot study demonstrates that one and half -month practice of *Pranayama* significantly improves physio psychological health of patient. *Pranayama* is a safe and cost-effective technique, which can be easily incorporated in patients with without any side effects. Further larger studies are needed to confirm the findings practices.

Conclusion – From the observations it can be concluded that selected types of *Pranayama* are effective in the management of Anxiety neurosis. In future larger studies are needed to confirm these findings.

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