



SYSTEMATIC REVIEW ON EFFECTS OF BHRAMARI PRANAYAM

Ayurveda

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ABSTRACT

Pranayam has many benefits and many studies were conducted experimenting these benefits, but there is very little documentation on specific pranayam individually. The Bhramari Pranayam has many health benefits but very diminutive scientific evidence showing its effects. Documentation is available of effects of Bhramari Pranayam which is done with other Pranayam and very few literature is assessable on specific effects of Bhramari Pranayam. In this paper, there is review of the available scientific studies on the Bhramari Pranayam. Hence systematically reviewed the available studies on the benefits of Bhramari Pranayam to evaluate how the studies were conducted and what are the effects of Bhramari Pranayam found to them. This review could lead in further identifying the gaps in the existing studies as well as exploring the new floor for scientific advances in this field.

KEYWORDS

Bhramari pranayama, practice of Bhramari Pranayam.

INTRODUCTION –

Pranayam is one of the Ashtang Yoga which is to calm down the mind and body as well as enhancing work ability. Bhramari Pranayam is the best breathing exercise to relax the mind from anxiety, frustration, anger and hesitation etc. affecting the output/performance of our body and mind.¹

The literatures of Bhramari Pranayam are available in the combine effects of other Pranayam practices. In this review, we are trying to search the existing scientific studies on the Bhramari Pranayam. We have systematically reviewed the available studies for the benefits of Bhramari Pranayam to evaluate how the studies were conducted and what are the benefits of Bhramari Pranayam in them.

This review could help to identify the gaps in existing studies and explore new tools to study its effects.

Search Criteria:

The studies which was done the effects of Bhramari Pranayam is searched online through the Embase, google scholar and manual search, PUBMED and All research papers, articles, thesis works are searched related to Bhramari Pranayam to do comprehensive and identified all the studies done on the effects of Bhramari Pranayam.

Selection of studies:

The selection of studies was done on the basis of inclusion and exclusion criteria.

- **Inclusion criteria:** The studies that have been done on Effects of Bhramari Pranayam generally, on particular system and benefits of Bhramari Pranayam on health were included.
- **Exclusion criteria:** The studies that have been done on practice of Bhramari Pranayam in combination with any other practice were excluded.

Data extraction:-

Study of all research papers articles was done and finally include the points as objective of the study, the methodology, the tools used, number of participants, findings, any interventions performed and inference consequential from the study findings.

Systematic Review of Previous work done:-

The Bhramari Pranayam has many health effects but very diminutive scientific evidences are available showing its specific effects. Hence aim is to try to investigate those scientific studies on Bhramari Pranayama. For that, the available studies reviewed systematically with the aim to their process evaluation and effects on body.

This review could help to identify the gaps in existing studies and explore new tools to study its effects.

- The Systemic review is carried out based upon following previous work done.

s.n	Author & Objective	Methodology	Tools used	Participants	Findings	Implication
1.	Author - Nivethitha L To measure change in HR variability at and after Bh.P. ²	Experimental study (5 min practice) single group repeated measures study	Four channel Polygraph, For recording electrocardiogram (ECG).	16 (9 males, 7 females) healthy volunteers	Significant increase in HR and LF spectrum of HRV and a significant reduction In HF spectrum of HRV	Study suggests that there might be a parasympathetic withdrawal during the practice of Bhramari.
2.	Diwakar Pal To determine the effects of Bhramari Pranayama on State Anxiety On sedentary male ³	Randomised self as control Pretest and post test design	STAS Anxiety Questionnaire	sedentary 40 male subjects	Significant reduce the anxiety level in sedentary male	In relation to anxiety, effect of Bhramari Pranayam has found significant.
3.	Usha Manjunath The effects of Bhramari Pranayama on aerodynamic and acoustic parameters of voice in healthy individuals. ¹	Pretest-posttest design study.	calibrated Phonatory Aero view System Computerized Speech Lab system. For Analysis Multidimensional Voice Program, a module of CSL,	A total of 24 participants in the age range of 20 to 25 years	Significant improvement in The maximum phonation duration, glottal airflow and pressure, average fundamental frequency, and cepstral peak prominence	Bhramari Pranayam is effective in improving the Acoustic and aerodynamic parameters of voice.

4.	Suprabha Srivastava To measure the interventional effect of Bhramari Pranayama On Mental Health in college students ⁵	Single group pre and post study.	Mental health scale(Kamlesh Sharma 1996)	60 subjects	Significant effect on mental health and increased level of mental health was found in post study in comparison to pre study.	Bhramari Pranayama provides a means to individual peace, happiness, develops optimism attitude, self esteem and proper coordination between mind and body.
5.	Kuppusamy M To assess the immediate effect of Bhramari Pranayama practice on the resting cardiovascular parameters in healthy adolescents. ⁶	Randomised control trial.	sphygmomanometer	60 healthy adolescents of both sex	Pre and Post inter group analysis also showed that significant reduction in HR and BP indices in Bhramari Pranayam group	Bhramari Pranayam (3bpm) practice improves the cardiovascular parameters through parasympathetic dominance in adolescents and it can be practiced routinely for the reduction of stress induced cardiovascular risk in their future.
6.	K Abishek Evaluate the efficacy of Bhramari Pranayama in relieving the symptoms of chronic sinusitis ⁷	The randomized trial	Sino-Nasal Outcome Test . Endoscopic examination and preoperative computed tomography (CT) scan, system.	60 patients with chronic sinusitis.	The efficacy of high-volume budesonide nasal irrigations and found them to be effective and well tolerated in the management of chronic sinusitis	Bhramari Pranayam helps by ventilating the sinuses by its mechanical cleaning and anti-inflammatory effects. Such practices of yoga are inexpensive, without side effects, and can improve the symptoms in patients with chronic sinusitis.
7.	Varun Malhotra To see effect of Bhramari pranayama on visual reaction time ⁸	Pre test and Post test study	Baseline record of visual record of Visual reaction time test was taken online.	31 subjects	Reaction times decreased from 0.39784 ± 0.15 to 0.28406 ± 0.09 at p value of 0.0005 and their concentration improved.	Bhramari Pranayam gives unparalleled command over mind and enables to focus the mind quickly in the most intense way on any object of thought-intellectual, physical or spiritual.
8.	Maheshkumar- Study to Effect of Bhrāmārī Prā āyāma practice on pulmonary function in healthy adolescents. ⁹	A randomized control trial	Pulmonary function test - RMS Helios spirometry	90 healthy adolescents	A significant ($P < 0.05$) improvement in all pulmonary function parameters; Slow vital capacity (SVC) and Maximum Voluntary Volume (MVV) also showed significant improvement in the Pranayam group	Bhramari Pranayam practice is effective in improving the pulmonary function among the adolescents which could be utilized for further clinical studies.
9	Dr.Kirti Bhati To evaluate effects of Bhramari Pranayam in a series of patients suffering from symptoms of Anidra on various scientific parameters ¹	Open randomized control clinical study.pre and post test	Sleep Diary Assessment. Brief Psychiatric Rating Scale	100 known cases of Aharaniya vega Nidra (Anidra)	Bhramari Pranayam provided 92.88% relief, Combined Therapy provided 98.26% relief followed by 93.56% relief in Sleep Hygiene group.	Yogic therapies when combined with behavioural therapy like Sleep Hygiene gives better relief to patients of Anidra.
10.	Kunwar Bipin Pratap Bhusan1, Dr. Neeru Nathani2 To find out the Impact of Bhramari Pranayama on Cardio Respiratory Endurance of the Cricket Players with Special Reference to Prakriti ¹⁰	Experimental (N=45) and control (N=45).Randomised control trial.	Cooper 12 minutes Run and Walk Test was used to identify Cardio Respiratory Endurance of players.	90 male (clinically healthy) cricket players	Pitta Prakriti individuals mean and SD were 2288.28 ± 298.353 and 2334.48 ± 275.546 respectively, having 't' value was 5.153 and 'p' value was 0.000 which was found statistically Significant.	Cardio Respiratory Endurance improved by practicing Bhramari Pranayama for twelve weeks. Improvement in the Cardio Respiratory Endurance was found more in Cricket Players having Pitta Prakriti.

Data synthesis -

After the data collection, the data construction was done by categorizing the study findings under pulmonary effects, cardiovascular effects and autonomic system.

DISCUSSION:-

Study of Effect on cardiovascular system concluded that Bhramari Pranayam improves the resting cardiovascular parameters in healthy adolescents. Reduction in the HR and BP indices. Pulse Pressure (PP), Mean Arterial Pressure (MAP), Rate significantly decreased after Bhramari Pranayam practice. This study showed that Bhramari Pranayam practice produces relaxed state and in this state parasympathetic activity overrides the sympathetic activity. Effects on pulmonary functions tests- As a deep breathing technique, this Pranayam practice reduces the physiological dead space ventilation and decreases the work of breathing. It makes efficient use of the

diaphragm and abdominal muscles which improve the pulmonary function A significant improvement in all pulmonary function parameters; FVC, FEV1, FEV1/FVC ratio, FEF 25%-75% and PEFR was seen in the Bhramari Pranayam. Slow vital capacity (SVC) and Maximum Voluntary Volume (MVV) also showed significant improvement. The Effect of Bhramari Pranayam on Visual Reaction Time study concluded that reaction times decreased and benefitted by Bhramari Pranayam and their concentration improved. Effect on Mental Health:-This study shows the increased mental health score after Bhramari Pranayam intervention in comparison to pre mental health score. It means the practice of Bhramari Pranayam session increase the mental health condition of students with constant effort. Effect on Chronic Rhinosinusitis-The breathing exercise of Bhramari Pranayama helps to relieve symptoms of chronic rhinosinusitis. Bhramari pranayama helps by ventilating the sinuses by its mechanical cleaning and anti-inflammatory effects. On other hand Effect of

Bhramari Pranayam on the Acoustic and Aerodynamic Parameters of Voice in Normophonic Females proved that significant improvements in the maximum phonation duration for all the sustained vowels. This indicates that the practice of Bhramari Pranayam improved the respiratory phonatory coordination.

CONCLUSION:-

1. Bhramari Pranayam is an effective but complimentary therapy in the management of clinical conditions related to Cardiovascular, Central nervous and Respiratory system.
2. More clinical condition related to these vital systems needs to explore where Bhramari Pranayam could help as complimentary modality.
3. Clinical issues like stress, anxiety etc. needs to be studied with the regular practice of Bhramari Pranayam as principal therapy specially in the subjects of developing age.

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