

Effect of Bhramari Pranayam on Resting Blood Pressure in Healthy Individuals: RCT

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Abstract: To investigate effect of bhramari pranayam on resting blood pressure in healthy individuals, samples were selected randomly and divided into two groups- group A (Bhramari group) and group B (Control group) using convenient sampling. Individuals were assessed for systolic and diastolic blood pressure after 15 days of Bhramari pranayam. Data was documented pre and post pranayam and analyzed using paired and unpaired t test. Both the groups were statistically significant on controlling blood pressure but Bhramari pranayam was more effective than control group. Bhramari pranayam when practiced by individuals control normal blood pressure.

Keywords: Bhramari Pranayam, Systolic Blood pressure, Diastolic Pressure

1. Introduction

Yoga is an ancient Indian science that designs way of life with its various practices. It is being practiced in the form of Asana (Posture), Pranayama (breathing manipulation), Meditation (concentration technique) etc by the practitioners in range of methods and style.

Pranayama, by continuous practice reduces the dead space ventilation and decreases the work of breathing.

The Bhramari is one type of pranayama. Its simplicity of slow breathing and it could be easily practiced by everyone irrespective of their age or gender makes it notifiable.

In Bhramari, the practitioner will sit in any comfortable posture and inhale and exhale through nostrils slowly and deeply. While exhaling, will have to produce sound (humming sound) like bumble bee strictly through nasal airways, keeping oral cavity closed by the lips, ears closed by fingers.

BENEFITS OF BHRAMARI:

The self induced humming sound in this practice resembles mantra repetition technique.

Bhramari changes the normal breathing rhythm, with prolonged exhalation and short inhalation, which produces significant impact in physiological system.

Practice of Bhramari for 5 to 10 min continuously induce subjective feelings of mind refreshment and blissfulness and sometimes the subjects are believed to go to even meditative state.

So Bhramari technique is not only a breathing practice but also a form of meditation. As compared with other pranayama, it does not have any kind of breath holding or alternate nostril involvement with counting.

There are many benefits for pranayama and there have been many studies conducted experimenting these benefits.

The Bhramari Pranayam is one such technique that has many health benefits but very little scientific evidence showing its effects is available.

Most of the literatures available are the shared effects of pranayama practices as a whole.

There is no literature available to discuss specific use of Bhramari pranayam.

Thus, the present study aims to evaluate effect of Bhramari pranayam on resting blood pressure such that Bhramari Pranayam can be used as an adjunct for treatment of hypertension.

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.

2. Methodology

Type of study: Randomized control trial.

Duration of study: 15 days.

Study setting: K.J Mehta High School, Nashik Road.

Inclusion Criteria

- 1) Yoga Sadhak willing to participate.
- 2) Males and females.
- 3) Age 20-40 years.

Exclusion Criteria

- 1) Yoga Sadhak diagnosed as a case of any cardiovascular disease.
- 2) Yoga Sadhak with history of Cardiac surgery.
- 3) Yoga Sadhak with presence of pace maker.
- 4) Presence of any rheumatic or congenital cardiac disorder.

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Research Methodology

- 1) Sample size: 40.(20 in Bhramari group and 20 in control group)
- 2) Type of Sampling: Convenient sampling.

Procedure

Yoga Sadhak depending on inclusion and exclusion criteria were selected.

Yoga Sadhak will be divided as Bhramari and control group. Nature of study was explained to Yoga Sadhak and informed consent was taken.

Yoga Sadhak were asked to sit in comfortable position. Systolic and diastolic blood pressure is recorded on first day

Bhramari group:

Yoga Sadhak were asked to chant 3 omkar. Yoga Sadhak were instructed to perform Bhramari Pranayam for 15 minutes.

At the end of the session, Yoga Sadhak was asked to chant 3 omkar.

This technique is continued for 15 days. Systolic and Diastolic blood pressure is recorded. Control group were not given any treatment.

Data Analysis

Paired t test is used within the group and Unpaired t test is used between the group.

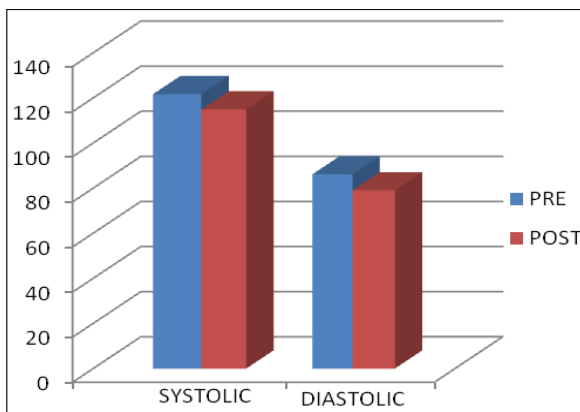


Figure 1: Graphical representation in Bhramari group:

P value for systolic and diastolic group is less than 0.0001, thus significant relation exist between Bhramari group.

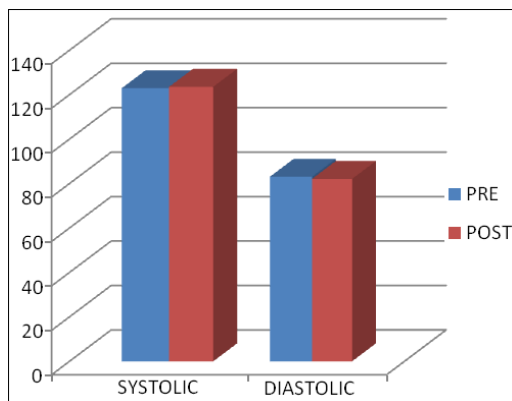


Figure 2: Graphical representation of control group

P value is less than 0.001 Thus; there is extremely significant relation between the treatments of control group.

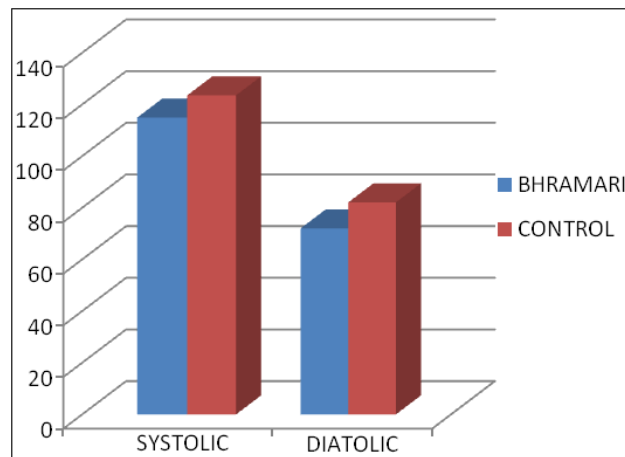


Figure 3: Graphical representation between Bhramari and control group

P value is less than 0.001. There is very significant correlation between experimental and control group

3. Discussion

Using Unpaired t test between the mean of Post Bhramari and Post control group, p value is less than 0.001. Thus, according to the statistical analysis, Bhramari pranayam is considered to have significant effect on resting systolic and diastolic blood pressure.

Bhramari Pranayam has it impact on sympathetic and parasympathetic nervous system. It alters peripheral vascular resistance. Parasympathetic nervous system activity increases and sympathetic decreases causing decrease in Blood pressure which decrease in heart workload.

Bhramari is also a sort of deep breathing exercises causing stimulation of stretch receptors. Thus, there occurs decrease in sympathetic activity and increase in parasympathetic activity on skeletal muscle. This leads to vasodilatation which in turn decreases peripheral resistance and so maintains or reduces blood pressure.

4. Conclusion

Bhramari pranayam causes decrease in blood pressure and helps to maintain normal physiological function of cardiovascular system. Thus can be used as an adjunct to maintain normal functioning of cardiovascular system.

5. Limitations

- a) Small sample size.
- b) Other parameters like Heart rate, Mean arterial pressure are not included.

Scope of Study

- Study can be done for specific cardiovascular conditions like hypertensive patients.

- Study can be done on specific population: students, women of particular age group, psychologically impaired patients.

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