

**EFFECT OF CHANTING SHIVA PANCHAKSHARI MANTRA (OM NAMAH SHIVAYA)
108 TIMES ON HEART RATE VARIABILITY ON HEALTHY MEDICAL STUDENTS**

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ABSTRACT

Background: Mantra yoga is an ancient science and has been understood and practiced by man since many years. In modern society with fast moving vehicles, rapid industrialization and with highly sophisticated lifestyles, there could be countless stimulation that could cause variations within one's body and mind and with the practice of Shiva panchakshi mantra it's said to be managed well. Mantra is a syllable or set of syllables which is said to help clear the mind and thus they give us the most balanced, spiritual and practical way to maintain the health of our body and mind. This study was done to see the effects of chanting shiva panchakshari mantra (om namah shivaya-108 times) on heart rate variability of healthy medical students. **Materials and methods:** A total of 60 subjects of age 18-25 years were recruited for the study. Subjects who fulfilled the inclusion criteria were appraised the purpose of the study and their rights as the research subjects. The subjects underwent yoga technique called as mantra chanting Shiva Panchakshari for 30 minutes. Pre assessment prior to the intervention and post assessments were done using heart rate variability Software after completing 30 minutes of intervention. **Results:** Due to the 108 times chanting of the Shiva Panchakshari Mantra there was significant drop in both heart rate and pulse rate of the case group. **Conclusion:** Summarizing the findings of the study, we conclude that 30 minutes of chanting Shiva Panchakshari Mantra (108 times) significantly decreases both heart rate and pulse rate in the case group. With the findings of the current study we conclude that, Shiva Panchakshari Mantra was effective in relaxing both mind and body of the practitioner from within as stated theoretically.

KEYWORDS: Mantra Yoga, Shiva Panchakshari Mantra, Chanting, HRV, Heart and pulse rate.

INTRODUCTION

The recitation of mantras, known as japa, lies at the very heart of all the Indians. Focusing the mind on Divinity as part of one's daily sadhana, it unites bhakti with meditation, body with mind, worship with introspection, opening inner doors to realms beyond the senses for realization of god. A mantra is a syllable, word or phrase endowed with special power, usually drawn from scripture. Mantras are chanted loudly during puja to invoke the Gods and establish a spiritual force field.^[1] Certain mantras are repeated softly or mentally for japa, also called as mantra yoga, the subtle tones quieting the mind, harmonizing the inner bodies and stimulating latent spiritual qualities. Japa refers to the repetition of a mantra, often while counting on a mala or strand of beads. It may be done silently or aloud. Japa is one of the ten niyamas (spiritual practices) of ashtanga yoga, often performed prior to meditation. Japa is recommended as a cure for pride and arrogance, jealousy, fear and confusion.^[1]

Doshas are the three bodily humors, which, according to ayurveda, regulate the body: vata, pitta and kapha. Vrittis, in yoga psychology, are the fluctuations of consciousness, the waves of mental activities of thought and perception. Amrita is the nectar of divine bliss which flows down from the sahasrara chakra when one enters the deepest states of meditation. Om Namah Shivaya in its various forms is the most treasured mantras since ancient times. The mantra AUM should be repeated while contemplating on its meaning. Hence follows the attainment of inward-mindedness and the disappearance of the obstacles. Sickness, apathy, doubt, carelessness, sloth, sensual indulgence, false perspective, lack of progress and lack of consistency are all distractions to the mind and are the obstacles. Pain, depression, trembling limbs and irregular inhalation and exhalation accompany these distractions.^[1]

Patanjali speaks of 14 kinds of japa: daily (nitya), circumstantial (naimittika), the japa of desired results

(kamyā), forbidden (nishiddha), penitential (prayashchitta), unmoving (achala), moving (chala), voiced (vachika), whispered (upanshu), murmured (bhramara), mental (manasa), uninterrupted (akhanda), nonuttered (ajapa) and circumambulatory (pradakshina).

Here are four suggestions on how to perform japa.^[1]

Perform japa aloud in the beginning stages, as it is easier to concentrate the thought. Once you can perfect in performing japa aloud, move on to performing it silently mentally. Pronounce the mantra slowly, properly, thoughtfully, with feeling. Do not intensify japa by reciting your mantra tens of thousands of times a day unless specifically instructed to do so by your guru. Intensifying japa without a guru's guidance could produce negative results.^[1]

The best place and time to perform japa is in the temple or your home shrine after a puja. Thus practiced, japa will calm your mind, balance your inner and outer forces and strengthen your spiritual practice.

Yoga historically likely began with mantra yoga as its original form. The oldest yogic text and spiritual teaching coming out of India, the Rig Veda, is primarily a teaching of mantra yoga. The Rig Veda is composed of sacred chants (like the Panchakshara mantra to lord Shiva and the Gayatri Mantra to the Sun God) designed to invoke the cosmic powers within us for their blessings and guidance. The Vedic ritual is based upon Agni or the sacred fire, which is regarded first of all as a power of divine speech and mantra. This sacred fire, which is inwardly the power of speech, serves to invoke and manifest all the deeper powers of the psyche and the greater cosmos.^[2]

Guidelines on the use of mantras: Chant the mantra with a calm mind, which implies a peaceful intention; follow a sattvik lifestyle, including a vegetarian diet. Refrain from negative emotions, take time in solitude and make your life a form of service. Honor the Divine power connected to the mantra before starting your practice, whether through mental acknowledgment, some form of ritual, or through a representative form like a statue or picture.

Make sure to pronounce the mantra properly. For this one has to learn the basic rules of pronouncing the Sanskrit alphabet. Initially chant the mantra out loud to gain a sense of its sound pattern. Then chant it softly on the breath to connect it to the prana. But most chanting will be mental, while you are silent outwardly. Chant the mantra in a regular manner at a certain time of day for a certain number of times. For counting mantras, it is best to use a mala, or rosary, of 108 beads.^[2]

Aims and objectives

- To evaluate the effects of “Chanting Shiva Panchakshari Mantra (108 times) on Heart Rate Variability on Healthy Medical Students.
- To prove the effectiveness of chanting the mantra on reducing the heart and pulse rate

METHODOLOGY

A total number of 60 subjects of age 18-25 years were recruited for the study from Prakruthi Ladies Hostel, Ujire. Subjects who fulfilled the inclusion and exclusion criteria were apprised about the purpose of the study and their rights as a research subject. Informed consents were obtained from the subjects by explaining the following both orally and in writing: study objectives, study methods, withdrawal of participants at any time and protection of privacy. Data were collected before and after the intervention. An ethical clearance was obtained from an institutional ethical committee.

Inclusion criteria

- Healthy Medical Students
- Age group: 18-25 years
- Females
- Practice conducting at Shri Dharmasthala Manjunatheshwara Yoga & Nature Cure Hospital, SHANTIVANA, Ujire for 30 minutes per student.

Exclusion criteria

- Subjects who are not interested, having any co morbid health conditions, psychological disorders, during menstruation due to impact of hormonal variation.

Study design

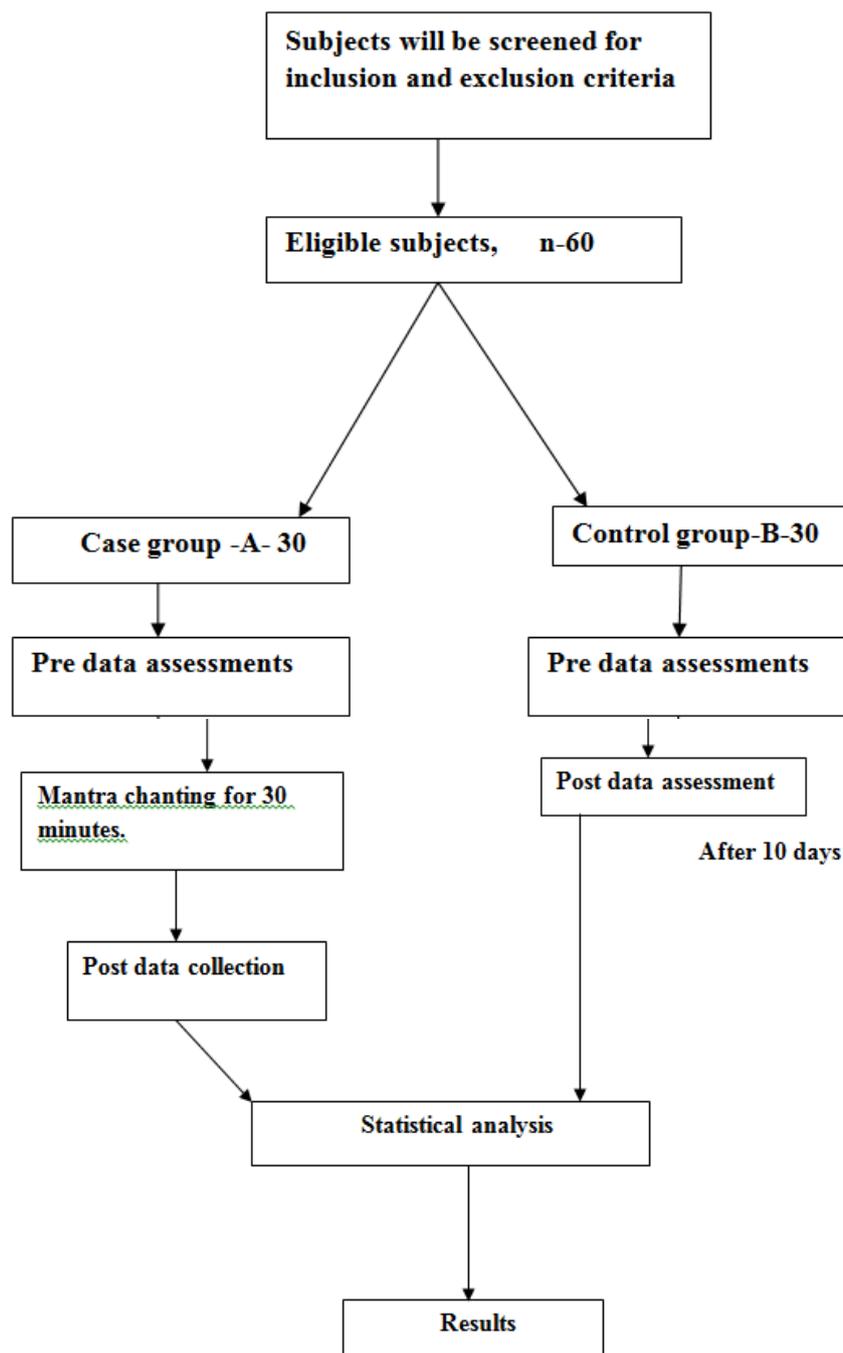


Illustration of study plan

Assessment

Biopac BSL 4.0 Software (Bio Pac 36 USA) was used to measure the heart rate and pulse rate among both case and control groups. Pre and post data was collected and analysis was done using Kubios HRV software.

Intervention: The subjects underwent practice of chanting Shiva Panchakshara Mantra (108 times) for 30 minute each. Pre and post assessments were done before and after completing 30 minutes of practice.

Data extraction and analysis: The data was collected by checking the pre and post Heart and Pulse rate. The assessments were done prior and immediately after the intervention. The data was further scored using respective scoring keys and arranged in Microsoft excel sheets for statistical analysis.

RESULTS

All the values are expressed as mean \pm SD, p-value, obtained by paired t-test. The results of the pre-post comparisons for the group are detailed below.

Case group

Sample size	Mean value	SD	t calculated value	t table value	P value
30	pre rr 78.48	8.710	11.076	2.042	0.05
30	pre sdn 66.26	8.003	11.464	2.042	0.05
30	pre rmssd 62.353	8.550	8.500	2.042	0.05
30	pre nnxx 85.82	9.263	1.41	2.042	0.05
30	pre nnxx 66.20	8.136	0.686	2.042	0.05
30	pre hf 31.61	5.622	7.738	2.042	0.05
30	pre vlf 4.89	2.211	2.046	2.042	0.05
30	pre lf 49.246	7.017	3.258	2.042	0.05
30	pre lf/ hf 1.625	1.274	0.448	2.042	0.05

sample size	mean value	s.d	t calculated value	t table value	p value
30	post rr 96.092	9.637	10.012	2.042	0.01
30	post sdn 83.01	8.957	10.244	2.042	0.01
30	post rmssd 75.62	8.696	8.358	2.042	0.05
30	post nnxx 87.75	9.367	1.125	2.042	0.05
30	post nnxx 67.223	8.198	0.681	2.042	0.05
30	post hf 39.55	6.28	6.928	2.042	0.01
30	post vlf 5.716	2.390	1.8931	2.042	0.05
30	post lf 53.42	7.308	3.128	2.042	0.05
30	post lf / hf 1.521	1.233	0.462	2.042	0.01

Table 1: Represents mean scores of case group (pre and post).

Control group

Sample size	Mean value	S.D	t calculated value	t table value	p value
30	Pre RR 78.48	8.710	11.076	2.042	0.05
30	Pre SDNN 66.26	8.003	11.464	2.042	0.05
30	Pre RMSSD 62.353	8.550	8.500	2.042	0.05
30	Pre NNxx 85.82	9.263	1.41	2.042	0.05
30	Pre NNxx 66.20	8.136	0.686	2.042	0.05
30	Pre HF 31.61	5.622	7.738	2.042	0.05
30	Pre VLF 4.89	2.211	2.046	2.042	0.05
30	Pre LF 49.246	7.017	3.258	2.042	0.05
30	Pre LF/ HF 1.625	1.274	0.448	2.042	0.05

Table 2: Represents mean scores of control group (pre and post).

Sample size	Mean value	S.D	t calculated value	t table value	p value
30	Post RR 96.092	9.637	10.012	2.042	0.05
30	Post SDNN 83.01	8.957	10.244	2.042	0.05
30	Post RMSSD 75.62	8.696	8.358	2.042	0.05
30	Post NNxx 87.75	9.367	1.125	2.042	0.05
30	Post NNxx 67.223	8.198	0.681	2.042	0.05
30	Post HF 39.55	6.28	6.928	2.042	0.05
30	Post VLF 5.716	2.390	1.8931	2.042	0.05
30	Post LF 53.42	7.308	3.128	2.042	0.05
30	Post LF / HF 1.521	1.233	0.462	2.042	0.05

DISCUSSION

The present study was conducted on 30 healthy medical students, to study the changes in the heart rate variability after the practice of chanting Shiva Panchakshari Mantra. The study showed that there was a significant reduction in the Mean RR, HR, SDNN, RMSSD, NNxx, VLF, HF, LF and HF/LF Ratio after the practice.

The main aim of the study was to practically assess the reduction of both heart and pulse rate in healthy medical students. There were 30 subjects enrolled (case and control each) for the study to which chanting was practiced for 108 times. The study proves that after the intervention there was a reduction in Mean RR, HR, SDNN, RMSSD, NNxx, VLF, HF, LF and HF/LF. There was a significant Standard Mean Difference (SMD), between pre and post data across all the variables assessed.

The preeminence of the japa of Panchakshara Mantra lies in its unique intellectual, emotional and spiritual effects in addition to other soul-elevating effects of mantra-japa. This mantra contains the essence of divine knowledge and wisdom. Even its literal translation implies a prayer for the refinement and illumination of our mind and intellect and for well-being of the world. Practice of yoga inhibits sympathetic tone in the skeletal muscle blood vessels leading to vasodilatation thus decreasing the peripheral vascular resistance and decreasing diastolic blood pressure (BP).^[3] Studies have shown that there is an increase in the HF power of autonomic functions indicating increased vagal tone and decrease in the LF power which denotes the sympathetic nervous function.^[4] It has been well documented that practice of mantra yoga induces a shift in the autonomic balance towards relative parasympathetic dominance.^[5]

Because of chanting Shiva Panchakshari mantra there is an influence in the parasympathetic nervous system, that

stimulates the vagal tone thereby it controls the cardiac functions and it decreases the activity of the Sympathetic tone. By balancing the Parasympathetic-Sympathetic tone and seeing the increase in the frequency of High Frequency modulation we can conclude that there is a vagal dominance and this dominance has the power to control Cardiac activity.^[4,5] “Om Namaḥ Śivāya” is one of the most popular and ancient Vedic Mantra. It comes from part of a Hindu prayer, the Śrī Rudraṃ Camakam, which is found in the second oldest of the Vedic texts, the Yajurveda. It is a hymn to Śiva and it is said that chanting this Mantra helps to get rid of internal imperfections, limitations, and sins. It is also a Mantra that elevates the psyche and awakens higher states of consciousness. This Mantra has the power to purify one’s mind and guide them towards a virtuous and divine life. The positive vibrations of “Om Namaḥ Śivāya” lift one’s spirits into previously unexplored planes of existence. Self-realization about the greatness of god and surrender of one’s ego is another important positive effect of chanting this famous Mantra. Continual chanting of this Mantra can cure anxiety, depression; reduce stress leads to cure Insomnia and mental illness. The etiology of Mantra is - “Mananāt trāyate iti Mantra” means Mantra is that which saves from repetitiveness. Mantra is, at its core, a tool used by the mind which eventually frees one from the worries of the mind. In the book “Powerful Self-Healing Techniques”, Dr. Ranjīe Singe said that the chanting of specific mantras caused the release of the hormone melatonin and enhanced sleep because of this. It’s also been found that self-created sounds such as chanting will cause the left and right hemispheres of the brain to synchronize. Such chanting will also help to oxygenate the brain, reduce heart rate and blood pressure and assist in creating calm brain wave activity.^[6] It helps to promote physical and mental health, augments resistance of the body against disease and has shown potent antioxidant activity. It is a sedative, anti-depressant, and anti-epileptic cardio-tonic and is

regarded as one of the most effective remedies for neurosis.^[7] It has Pharmacological activities such as Hypotensive, analgesic, anti-inflammation, CNS-depressant, tranquilizing, anti ulcerogenic, anti-anxiety.^[8]

Ancient Egyptians used Solfeggio scale for healing and altering consciousness in large sound chambers where they would play frequencies at 528 Hz throughout the chambers to generate specific effects on individuals.^[9] This frequency is also known to increase energy, clarity of mind, awareness, awakened or activated creativity, ecstatic states like deep inner peace, dance and celebration and activate one's imagination, intention and intuition.^[10,11]

The overall results have shown to be significant in practice of yoga (chanting Shiva Panchakshari Mantra) to be very safe and beneficial to reduce Heart and pulse rate in healthy medical students.

Limitations

Despite the impressive results of Shiva Panchakshari Mantra found in this study, interpretations of the study are warranted because of certain limitations, such as: Short Duration, Age limit: 18 to 25 years, Larger sample size would have given more authenticated results.

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