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EFFECT OF YOGA NIDRA ON BLOOD PRESSURE: A REVIEW

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ABSTRACT

This review paper aims to summarise the evidence of effect of yoga nidra on blood pressure. After assessing quality of studies, 5 articles were included in the study. Although no long-term effects were measured in these studies; yoga nidra seems to be more effective in reducing SBP and DBP. Despite all these studies the degree to which yoga may decrease blood pressure as well as the potential modifying effects of yoga intervention and type of comparison group remain unclear. To address these gaps, we still need more studies to see the long-term effect of yoga nidra on blood pressure needs to be done.

Keywords: Blood Pressure, High Blood Pressure, Yoga Nidra, Review.

INTRODUCTION

Hypertension and its complications are a leading cause of death in modern societies. The only effective form of management has been anti-hypertensive drug. The drug regimens available, sadly, are by no means ideal. In many patients, they cause significant side effects, a chance of dangerous outcomes and a reduced life span.^[1]

Drug prices, drug reactions, and non-compliance with the drug protocol all relate to current high rates of uncontrolled hypertension. There is a great need for alternative, less costly approaches to reduce blood pressure that have a reduced probability of medication reactions and that can convey the advantages of long-term adherence.^[2]

Yoga is one such alternative method in healthcare that is thought to boost regulation of blood pressure. There is no single concept of yoga practice that is widely recognized, although it is typically defined as an ancient tradition that includes postures, breath control, and meditation, as well as unique ethical practices. There is no single definition of yoga practice. Blood pressure management is among the most researched of the many benefits ascribed to yoga practice. Although several studies have been published on the possible benefits of yoga for lowering blood pressure and other risk factors for cardiovascular disease. Yoga nidra is probably best-known technique to induce complete physical mental and emotional relaxation.^[3]

Yoga nidra is a meditation as well as relaxation practice, first discovered by Sw. Satyananda Saraswati. From an experience an idea came to his mind that sleep is not a state of total unconsciousness. He began studying the Tantric scriptures and after practicing them he constructed a new system of relaxation that was Yoga nidra.^[4]

Studies have stated that the practice of yoga nidra results in a hypothalamic reaction, stimulating the parasympathetic nervous system and suppressing the function of the sympathetic nervous system.^[5,6,7] Yoga nidra practice brings a profoundly relaxed state of body and mind on the basis of this theory, though conscious minds are clearly alert to understand what they feel. Yoga nidra also induces nerve relaxation and tranquility and reduces deep-rooted unconscious mental tension.^[6,7,8] The theoretical basis for the calming effect of yoga nidra, taken into account, is that it normally stimulates the parasympathetic nervous system in order to relieve mental and psychological symptoms. Additional benefits of yoga nidra, compared to other intervention methods, include affordability, non-invasiveness, protection, and accessibility.^[5,9,10]

In this light, the advent of a safe, efficient and inexpensive treatment for mild to moderate hypertension with Yoga Nidra relaxation is most promising for both doctors and the community as a whole. Numerous clinical trials have validated the efficacy of Yoga Nidra in lowering the elevated blood pressure levels of hypertensive patients. In some nations, the procedure is now commonly prescribed by physicians.^[11,12,1]

METHODOLOGY

A computer-based literature search was done using the PUBMED, PUBMED CENTRAL, and GOOGLE SCHOLAR. Relevant articles with full text published in English using all possible combinations of the index terms "Yoga nidra", "blood pressure" and "hypertension" were screened and included. Editorials, Commentaries, Discussion papers, Conference abstracts, were excluded. All studies have focused on Yoga nidra relaxation and blood pressure. All the articles were evaluated with respect to this question.



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Whether yoga nidra relaxation has effect on blood pressure? After the screening through articles 5 relevant and recent articles were included in the review. The characteristics of reviewed articles are summarized in the table.

DISCUSSION AND CONCLUSION

Hypertension is not a single disease, but a syndrome with multiple causes where in most of the time the causes remain silent. The pathogenesis for hypertension is still not fully understood but it is considered as a multifactorial disease in which arterial pressure is persistently high without any identifiable cause.

Sympathetic nervous system over activity and consequent increase in peripheral vascular resistance are believed to be the two of the possible mechanisms for essential hypertension. In addition, direct pressure effect by sympathetic nervous system and catecholamine release from the adrenal medulla may also be involved.^[10]

In normal circumstances, the parasympathetic nervous system takes over after the emergency and is principally active throughout the sleep. However, largely it's been seen that the sympathetic nervous system remains active throughout most of the daytime leading to the expertise of distress. While during the stress sympathetic nervous system becomes activated and the organism shows the "Fight or Flight" response.

Yoga nidra is a state of magnetism. The whole body is magnetized and it becomes full of electromagnetic pulsation, vibration and concentration. With these phenomena, according to the stimulation or depression of the cardiac centre in the medulla oblongata, the body becomes painless, respiration becomes occasional, and the heart rate slows down.^[4]

In Yoga Nidra, by inducing complete physical, emotional and mental relaxation an attempt is made to activate the parasympathetic system, and slowly a new balance between the sympathetic and parasympathetic systems is achieved. This reducing stress, where the brain is completely relaxed results in mental relaxation with the practice of Yoga Nidra.^[11] Thus, the practice of yoga nidra brings alpha dominance in the brain, which is characterized by mental relaxation.^[1]

Yoga nidra is not the body movement but rather the self-awareness of the different parts of body by participants under the direction of the instructor. In the preparation stage of the practice, the participants remove their glasses and all the gadgets from their bodies and close their eyes with their palms facing upward in a comfortable position lying on the floor. In this stage, the participants' body and mind start to relax and rest, however the participants retain consciousness. In the resolve stage, the participant's repeats their desire three times with very simple and positive phrases. In the rotation of consciousness stage, the participant's consciousness is followed from their head to their toes, from their right side to the left, according to the instructions given by the instructor. During the awareness of the breath stage, participant's consciousness concentrates upon 10 deep breaths, while tracking the rate. In the feeling and sensation stage, the instructor directs participants to feel a sense of contrast to their body. For example, participants are encouraged to feel that their bodies are as light as a bird or as heavy as rocks according to how they feel about their body. In the image visualization stage, participants consciously think of the words that correspond to the events or things that the instructor indicates. For example, the participant is reminded of their most painful moments, their happiest moments, or the joys of life, and to feel the corresponding emotion. In the resolve stage, the participants determine their desire consciously once again. In the ending of the practice stage, the participants let their body and mind slowly return to reality, according to the instructor's guide. The instructor directs the participants to slowly move their bodies. It is important that the instructor does not allow the participant to sleep while the yoga nidra is performed and to make the participant's consciousness clear.^[10]

Yoga nidra can be consider as a highly effective practice for reducing blood pressure of hypertensive patients as it is shown to reduce the pulse rate respiration rate and also releases the stress, fear and anger. It establishes the body mind relationship. Through the relaxation of body, it relaxes the entire nervous system while through the relaxation of central nervous system relaxation in autonomic nervous system takes place, as it reduces the whole physical and mental activities. Metabolic rate of the body is reduced by the reduction of muscular and neural activities.

During the practice of Yoga Nidra due to body and mind relaxation, muscles become relaxed, vasodilation occurs thus arteries becomes dilated. Hence the cardiac output as well as cardiac work load reduces; the systolic and diastolic blood pressure with pulse rate becomes down. Regular practice of Yoga Nidra relaxes the body leading to reduced metabolic activities thus less oxygen requirement. As the need of the oxygen in the body reduces; the respiration rate is reduced. Hence, if yoga nidra is practiced regularly it can be effective as a preventive measure of the silent killer Hypertension.^[4]

In a study by Kamakhya Kumar Yoga nidra didn't show a significant change on depression level of the patients, but the regular practice of it can be considered as an effective as a preventive measure for the hypertension.^[4]



Even the studies have concluded that Yoga nidra is an effective measure to reduce the level of blood pressure among elderly with hypertension ^[13], cardiovascular parameters in women with PCOS ^[14] and has preventive, promotive and curative value. It prevents stress and stress-related disorders by relaxation. ^[1]

Also, the studies showing the effect of yoga and meditation on mild to moderate essential hypertensives showed a significant fall of mean blood pressure after 3 months of yoga nidra ($p < .01$). Results of this study suggest that yoga nidra can be used as adjunctive treatment with drug therapy on mild and moderate essential hypertensives. ^[11]

Despite all these studies the degree to which yoga may decrease blood pressure as well as the potential modifying effects of yoga intervention and type of comparison group remain unclear. To address these gaps, we still need more studies to see the long-term effect of yoga nidra on blood pressure needs to be done.

Table 1

Author/year of publication	Aim/purpose	Research design	Sample characteristics	Outcome measures	Key findings
1.Kamakhya Kumar/2005 ^[4]	aims at finding out the effect of yoga nidra on hypertension and other psychological co-relates.		Forty people suffering with mild hypertension (30 males and 10 females) ranged 30-60 years	SBP, DBP, PR, RR, general questionnaire for stress, fear, anger, depression	The result shows a significant change as yoga nidra positively decrease the blood pressure (both systolic and diastolic) as well as pulse rate, respiration rate, stress, anger and fear. Whereas no significant change shown at the depression level.
2.Deepa T. et al./2012 ^[11]	to evaluate the effect of yoga and meditation on mild to moderate essential hypertensive patients.		thirty subjects in the age group of 45 – 65 yrs under anti-hypertensive medication	SBP, DBP, PR, PEFR, lipid profile, MI, 12-lead ECG	study suggest that yoganidra can be used as adjunctive treatment with drug therapy on mild and moderate essential hypertensives
3.Thangam Fuel a Esther et al./2019 ^[13]	assess the effect of yoga-nidra on blood pressure among elderly with hypertension residing at selected old age homes	Quasi experimental	35 elderly experimental group(n=20) and the other to the control group (n=15)	SBP, DBP	Yoga-nidra is an effective measure to reduce the level of blood pressure among elderly with hypertension residing at old age homes.
4.Saraswati Devi et al./2015 ^[1]	The aim of present study was role of yoga nidra and shirodhara on hypertensive patients.		32 hypertensive patients aged 30-60 years	SBP, DBP	that a significant reduction in the systolic blood pressure, diastolic blood pressure occurs in subjects practicing yognidra and shirodhara ($p < 0.001$). result:The finding reveals that significantly reduced the level of systolic and diastolic blood pressure of the hypertensive.



5. Vanitha A. et al./2018 ^[14]	The aim and objective of this study are to assess the 12 weeks of yoga nidra intervention on resting cardiovascular parameters among PCOS patients.		40 PCOS women with the age between 18 and 35 years	SBP, DBP, HR	The present study showed favorable changes in blood pressure, HR, and other anthropometric parameters in PCOS after 12 weeks of yoga nidra intervention.
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*PEFR: peak expiratory flow rate

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