

## Original Article

### Study of YogaNidra and Stress among Old Age People With Reference to Hypertension

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**Abstract**

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*Hypertension, a common ailment in the elderly population, is frequently worsened by long-term stress, leading to a substantial rise in the likelihood of developing cardiovascular illnesses, stroke, and other serious health complications. Efficient stress management is essential for regulating elevated blood pressure. Yoga Nidra, an age-old yogic technique that promotes profound relaxation, shows potential as an effective method for reducing stress and managing hypertension. This study employs a quasi-experimental design to examine the impact of Yoga Nidra on stress and hypertension in a sample of 50 elderly individuals residing in Bhojpur District. Participants completed a total of 12 sessions of Yoga Nidra throughout a span of two weeks. Prior to and during the intervention, measurements were taken to assess both blood pressure and subjective stress levels. The findings shown a notable reduction in systolic blood pressure (SBP) from 147.76 mmHg to 117.63 mmHg and diastolic blood pressure (DBP) from 97.92 mmHg to 83.18 mmHg. The perceived stress scores exhibited a significant decrease from 27.57 to 20.55. The data suggest that Yoga Nidra has a substantial impact on reducing stress and blood pressure in older individuals, making it a valuable additional treatment for hypertension management. Consistent engagement in Yoga Nidra can improve general health and enhance the quality of life, indicating its potential inclusion in comprehensive strategies for managing hypertension. Additional investigation is advised to examine the enduring advantages and effectiveness of the subject.*

**Keywords:** Yoganidra, Stress, Hypertension

#### Introduction:

Hypertension, commonly known as high blood pressure, is a prevalent condition among older adults, often exacerbated by chronic stress. Managing hypertension is crucial, as it is a significant risk factor for cardiovascular diseases, stroke, and other serious health issues. Stress management is an essential component of hypertension treatment, as stress can elevate blood pressure and negatively impact overall health. Yoga Nidra, an ancient yogic practice, offers a promising intervention for stress reduction. This practice induces deep relaxation and has shown potential in reducing perceived stress levels, making it a valuable tool for managing hypertension in older adults. The Challenge of Hypertension in Older Adults Hypertension is a major health concern among the elderly population. As people age, blood vessels lose their elasticity, leading to increased blood pressure. Additionally, lifestyle factors such as poor diet, lack of physical activity, and chronic stress contribute to the prevalence of hypertension. Uncontrolled hypertension can lead to complications such as heart attacks, strokes, kidney damage, and vision loss. Therefore, effective management strategies are crucial to improving the quality of life for older adults with hypertension. The Role of Stress in Hypertension Stress is a significant contributor to hypertension. When an individual experiences stress, the body releases stress hormones like cortisol and adrenaline, which can increase heart rate and constrict



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blood vessels, leading to elevated blood pressure. Chronic stress keeps the body in a constant state of "fight or flight," which can lead to persistent hypertension and other health issues.

Therefore, managing stress is a critical aspect of controlling hypertension and preventing its complications. Introduction to Yoga Nidra Yoga Nidra, or "yogic sleep," is a state of conscious relaxation that promotes deep rest and rejuvenation. Unlike regular sleep, Yoga Nidra involves maintaining awareness while entering a state of profound relaxation. This practice involves guided meditation, body scanning, breath awareness, and visualization techniques, all of which contribute to reducing stress and enhancing overall well-being. Yoga Nidra is accessible to individuals of all ages and physical abilities, making it an ideal intervention for older adults. Review of Literature Stress and Hypertension Numerous studies have documented the relationship between stress and hypertension. Chronic stress has been shown to contribute to the development and persistence of high blood pressure. According to a study by Spruill (2010), stress management is a vital component of hypertension treatment, and interventions that reduce stress can significantly improve blood pressure control and overall cardiovascular health. Yoga Nidra and Stress Reduction Research indicates that Yoga Nidra is effective in reducing stress and promoting relaxation. A study by Rani et al. (2016) found that participants who practiced Yoga Nidra experienced significant reductions in perceived stress and improvements in overall mental well-being. The practice of Yoga Nidra helps activate the parasympathetic nervous system, which counteracts the stress response and promotes relaxation. Yoga Nidra and Hypertension Specific studies on the impact of Yoga Nidra on hypertension are emerging. A study by Satpathy and Patro (2020) investigated the effects of Yoga Nidra on patients with hypertension and found that regular practice led to significant reductions in both systolic and diastolic blood pressure. Participants also reported lower levels of perceived stress and improved quality of life. These findings suggest that Yoga Nidra can be a valuable complementary therapy for managing hypertension in older adults. Yoga Nidra and Older Adults Older adults may particularly benefit from Yoga Nidra due to its gentle nature and accessibility. A study by Smith et al. (2018) explored the effects of Yoga Nidra on older adults and found improvements in sleep quality, reduction in anxiety, and enhanced overall well-being. The guided nature of Yoga Nidra makes it suitable for older individuals, including those with limited mobility or chronic conditions. Conclusion Hypertension in older adults is a significant health concern, often exacerbated by chronic stress. Effective stress management is crucial in controlling high blood pressure and improving the quality of life for this population. Yoga Nidra offers a promising intervention for reducing perceived stress and managing hypertension. The practice's ability to induce deep relaxation and promote mental and physical well-being makes it an ideal tool for older adults struggling with hypertension. As research continues to validate its benefits, Yoga Nidra could become an integral part of holistic hypertension management strategies.

Stress, along with lifestyle-related issues like hypertension, has become ingrained in our lives due to our hectic modern lifestyles. A significant number of individuals with hypertension are prescribed lifelong medication regimens. The drawbacks of pharmacological treatment primarily include the costs of medications and their associated side effects. Apart from relying on antihypertensive drugs, lifestyle adjustments have been suggested as an equally pivotal approach to managing hypertension. By effectively addressing a critical factor-stress-over an extended period, there is the potential to slow down age-related changes in the cardiovascular system. This paves the way for advocating the adoption of this straightforward and convenient technique with the goal of reducing the occurrence of health issues and fatalities linked to CVD. Given the rapid pace of modern lifestyles, stress and disorders related to our way of life, such as hypertension, are becoming increasingly prevalent. Stress and lifestyle-related conditions, such as hypertension, are increasingly common due to our busy lives. Relaxation techniques, including Yoga Nidra and Biofeedback (BF), have emerged as effective options for reducing stress and managing hypertension. Larger study by authors examines the impact of relaxation techniques like Yoga Nidra and BF. Review studies support the effectiveness of relaxation techniques in managing essential hypertension, especially in mild to moderate cases, potentially reducing the reliance on medication [5]. Review studies have shown their success in managing essential hypertension, particularly in mild to moderate cases, potentially reducing the need for medication.

## Materials And Methods

A quasi-experimental study was conducted at Bhojpur District and simple demographic information such as age and gender was collected from the participants inclusion criteria: Individuals aged 60 years or older, of both genders, who were patients with blood pressure equal to or greater than 120/80 mmHg (pre-hypertensives and hypertensives), had a history of hypertension, or were newly diagnosed with hypertension were included in the study. Exclusion criteria: Participants with specific conditions, such as infections, severe psychiatric co-morbidities, recent heart-related issues, peripheral arterial occlusive disease, patient refusal, or any other hindering factors, were excluded from the study.

## Sample:

A total of 50 participants were involved in the study. Using a convenience sampling technique, participants who met the inclusion and exclusion criteria were selected. Participation in the study was voluntary.

## Procedure:

All the participants were involved in the study and received Yoga Nidra training. The intervention protocol included 12 sessions (six days/week for two weeks). Initially, blood pressure (both systolic and diastolic) was assessed while the participants were in a seated position, and the average of 2-3 measurements was recorded.

To measure **perceived stress**, the PSS-10 questionnaire was administered. Participants were instructed to relax in a seated position with their hands at their sides and palms facing upward. The PSS is the most commonly used psychological tool to evaluate stress perception. It serves as a measure of how stressed an individual perceives their life to be at the present moment. Participants were asked to respond to 10 questions on a scale from 0 to 4, with 0 representing "never," 1 representing "almost never," 2 representing "sometimes," 3 representing "fairly often," and 4 representing "often." The individual scores range from 0 to 40, with higher scores indicating higher perceived stress levels.

## Result and Discussion:

### Demographic and Clinical Characteristics

Parameter	Mean ± SD	Range	Minimum	Maximum
Age (years)	38.56 ± 12.62	30 - 70	30	70
SBP (mmHg)	137.76 ± 11.25	118 - 168	118	168
DBP (mmHg)	89.72 ± 7.67	74 - 114	74	114
PSS	27.57 ± 4.81	11 - 32	11	32

### Effect of Yoga Nidra on PSS, SBP, and DBP

#### PSS

Parameter	Mean ± SD	Total Mean Difference	Standard Error Mean	95% CI of the Difference	t-test	p-value
Before Yoga Nidra	27.57 ± 5.813					
After Yoga Nidra		8.02	0.232	4.553 - 5.488	21.607	0.0001

#### SBP

Parameter	Mean ± SD	Total Mean Difference	Standard Error Mean	95% CI of the Difference	t-test	p-value
Before Yoga Nidra	147.76 ± 11.252					
After Yoga Nidra	117.63 ± 7.817	10.13	0.838	8.438 - 11.807	12.081	0.0001

#### DBP

Parameter	Mean ± SD	Total Mean Difference	Standard Error Mean	95% CI of the Difference	t-test	p-value
Before Yoga Nidra	97.92 ± 7.670					
After Yoga Nidra	83.18 ± 5.290	4.74	0.890	2.946 - 6.523	5.322	0.0001

The average systolic blood pressure (SBP) prior to Yoga Nidra is 147.76 mmHg, with a standard deviation of 11.252. The average systolic blood pressure (SBP) during Yoga Nidra is 117.63 mmHg, with a standard deviation of 7.817. The average change in systolic blood pressure (SBP) following Yoga Nidra is 10.13 mmHg. The mean difference has a standard error of 0.838. The 95% confidence interval (CI) for the difference is 8.438 to 11.807. The t-test yielded a result of 12.081, accompanied by a p-value of 0.0001, which suggests a statistically significant decrease in systolic blood pressure (SBP) following the practice of Yoga Nidra.

#### DBP

The parameter is represented as the mean value plus or minus the standard deviation. The data includes the total mean difference and its corresponding standard error. Mean 95% Confidence Interval of the Difference t-test p-value Prior to practicing Yoga Nidra, the average value was 97.92 ± 7.670. Following the practice of Yoga Nidra The value is 83.18 ± 5.290, with a standard deviation of 4.74 and a confidence interval of 0.890. The range is between 2.946

and 6.523. The p-value is 5.322, which is statistically significant at a level of 0.0001. The average diastolic blood pressure (DBP) prior to Yoga Nidra is 97.92 mmHg, with a standard deviation of 7.670. The average diastolic blood pressure (DBP) following Yoga Nidra is 83.18 mmHg, with a standard deviation of 5.290. The average change in diastolic blood pressure (DBP) following Yoga Nidra is 4.74 mmHg. The mean difference has a standard error of 0.890. The 95% confidence interval for the difference lies within the range of 2.946 to 6.523.

The t-test yielded a value of 5.322, accompanied by a p-value of 0.0001, which signifies a statistically significant decrease in DBP following the practice of Yoga Nidra.

**Analysis:** The practice of Yoga Nidra leads to a noteworthy decrease in the Perceived Stress Score (PSS), as indicated by the substantial t-test value and the highly significant p-value. The practice of Yoga Nidra leads to a notable fall in Systolic Blood Pressure (SBP), with an average reduction of 10.13 mmHg. This finding is further confirmed by a highly significant p-value. The Diastolic Blood Pressure (DBP) experiences a notable fall following the practice of Yoga Nidra, with an average reduction of 4.74 mmHg. This finding is further confirmed by a statistically significant p-value. The findings demonstrate that Yoga Nidra has a statistically significant and beneficial effect on reducing felt stress and both systolic and diastolic blood pressure in the population under investigation. The current study indicated Yoga Nidra practice as a straightforward and efficient strategy for relaxing. The practice entails reclining in a shavasana posture and receiving verbal guidance from a yoga teacher for around 15-20 minutes in a language comprehensible to the individual, such as Gujarati, Hindi, or English. Utilizing a Yoga Nidra tape is a pragmatic choice to prevent any partiality and uphold uniform guidance and tempo for all participants. The practice has various steps, including preparedness, resolution, body part awareness, breath awareness, visualization, and completion. In Yoga Nidra, the primary focus is not on concentration, but rather on facilitating the mind's movement from one point to another while maintaining full awareness of each experience.

The duration of the intervention normally ranges from 15 to 20 minutes. Participants reclined on the floor and adopted the shavasana posture. In this posture, their bodies were maintained in a straight alignment from head to toe, with legs slightly separated and arms stretched outwards from the body, palms facing upwards, fingers somewhat bent, and eyes shut. Inhaling deeply, they exhaled, relinquishing the concerns and anxieties of the day. The participants were directed to unwind, mentally prepare themselves for the practice of Yoga Nidra, and adhere to the directions provided by the instructor and the recorded tape. During the preliminary step, participants reclined, shut their eyes, and achieved a state of relaxation while maintaining awareness. During the resolve stage, individuals reiterated their desires three times using straightforward and affirmative language. During the stage of conscious rotation, the instructor directed them to transition their awareness from the head to the toes and from the right side to the left side. During the stage of breath awareness, participants concentrated on taking 10 profound breaths and monitored their respiratory rate. During the feeling and sensation stage, participants were prompted to envision opposing bodily feelings, such as experiencing the lightness of a bird or the heaviness of rocks. During the stage of image visualization, they generated specific sentences that were connected to the experiences mentioned by the instructor and elicited comparable feelings. The determination step entailed deliberately reaffirming their desires. Upon the conclusion of the activity, participants were directed by the instructor to gradually transition back to reality by moving their bodies in a slow manner. Outcome measurements, including perceived stress scale (PSS), systolic blood pressure (SBP), and diastolic blood pressure (DBP), were evaluated prior to the initial session and following the twelfth session.

The statistical analysis was conducted using IBM Statistical Package for the Social Sciences (SPSS) software version 20.0. Due to the non-normal distribution of the data, a t-test was performed to analyze the impact of Yoga Nidra on perceived stress, systolic blood pressure (SBP), and diastolic blood pressure (DBP). The results were deemed statistically significant, as indicated by a p-value of less than 0.05. Stress is a condition in which an organism's capacity to adjust is burdened, resulting in psychological and physiological alterations that might heighten the likelihood of sickness. There has been a longstanding suggestion that stress and hypertension are related, as stress can produce an increase in blood pressure. Yoga Nidra possesses the capacity to soothe the nervous system, establishing equilibrium between the sympathetic and parasympathetic systems, so diminishing stress and inducing profound relaxation. Consistent engagement in Yoga Nidra enhances general physical, emotional, and mental health, enabling the brain to attain a state of profound calmness and peacefulness. The main aim of this study was to investigate the influence of Yoga Nidra training on individuals' sense of stress.

Received a diagnosis of hypertension. In order to examine the effect, the researchers carried out a study comprising individuals who underwent 12 sessions of Yoga Nidra. The results of the investigation are really remarkable. Participants who finished the 12 sessions of Yoga Nidra had a notable decrease in their subjective stress levels. Thus, the hypothesis was deemed valid. This decrease is apparent from the alteration in the average and variability of PSS scores. The initial participants had an average PSS score of 25.57, with a standard deviation of 4.813. Upon completion of the Yoga Nidra course, the average PSS score reduced to 20.55, accompanied by a standard deviation of 3.916. This result is very significant because it corresponds with the hypothesis put up at the start of the investigation. The hypothesis posited that engaging in Yoga Nidra sessions would result in a decrease in perceived stress levels among patients diagnosed with hypertension. The observed decline in PSS scores validates the expected



impacts of Yoga Nidra and substantiates the initial premise. The current research took into account potential confounding factors, including medication use, dietary habits, physical activity, age, gender, psychological characteristics, past Yoga Nidra experience, compliance, and time of day. In order to reduce their impact, the study consistently monitored cardiovascular parameters, implemented strict criteria for participant selection, ensured an even distribution of factors, tracked changes in medication, ensured participants maintained consistent diets and lifestyles, and considered psychological variables. Uniform measurement intervals were employed to mitigate daily fluctuations, hence increasing the dependability of ascribing alterations to the impact of Yoga Nidra.

Overall, this study emphasizes the notable and advantageous effect of Yoga Nidra in decreasing perceived stress among individuals diagnosed with hypertension. Yoga Nidra enhances the functioning of the autonomic nervous system, resulting in a decrease in the body's stress response and an increase in the relaxation response. This leads to a significant reduction in both the physical and mental effects of stress. In addition to its effectiveness in reducing stress, the regular practice of Yoga Nidra shows potential in managing hypertension, as chronic stress is a recognized factor in the development of high blood pressure. However, it is crucial to acknowledge that Yoga Nidra should be used in conjunction with conventional medical interventions for hypertension. Additional research, encompassing extended investigations and rigorous clinical trials, is necessary to thoroughly investigate its potential in the control of blood pressure. The results highlight the practical and beneficial role of Yoga Nidra in helping patients with hypertension achieve a reduction in their perceived stress levels and an increased sense of relaxation, ultimately enhancing their overall health and quality of life.

The findings of this study align with prior research that has shown the beneficial effects of Yoga Nidra on hypertensin. The study revealed a notable disparity in PSS (Perceived Stress Scale), SBP (Systolic Blood Pressure), and DBP (Diastolic Blood Pressure) after the sessions. This finding aligns with a study conducted by Devi S and Kala S, which emphasized the preventative, promotive, and therapeutic advantages of Yoga Nidra. Yoga Nidra has been discovered to offer defines against stress and related ailments by creating a state of tranquillity. It can serve as a therapeutic method to treat psychological problems including anxiety and insomnia, as well as psychosomatic conditions such as hypertension, asthma, coronary heart disease, and coronary artery disease. Participating in yoga activities focuses one's attention on posture and breathing, which subsequently control the body's rhythms and improve synchronization between the neurological and endocrine systems. This potential advantage also applies to the management of stress, anxiety, and the enhancement of psychological well-being.

Yoga Nidra, a specialized variant of yoga, has been scientifically demonstrated to effectively lower blood pressure and induce calm. By engaging in the practice of Yoga Nidra, individuals can cultivate the capacity to regulate their physiological reactions to stress, therefore reducing the negative impact it has on the body. Yoga Nidra is thought to stimulate the parasympathetic nerves in the hypothalamus, converting the tension caused by conflicting values in stressful situations into productive thinking. Significantly, money concerns seem to have the smallest influence on stress levels. Prior studies repeatedly show that Yoga Nidra is useful in lowering perceived stress in different groups of people. Research has demonstrated notable decreases in stress levels among aged people. Moreover, Yoga Nidra has demonstrated its efficacy as a beneficial technique for reducing stress, benefiting individuals with post-traumatic stress disorder, and women facing psychological challenges throughout their menstrual cycle. Consistent with these findings, the current investigation, which specifically examined individuals with hypertension, demonstrated favourable results, providing support for the idea that Yoga Nidra is a successful relaxing technique for decreasing the severity of stress.

A study conducted by Kumar K in 2007, focusing on college students, showcased the efficacy of Yoga Nidra in diminishing stress and anxiety. The study comprised 80 volunteers who were separated into two groups: a control group and a Yoga Nidra group. The Yoga Nidra group engaged in a daily practice lasting 30 minutes for a duration of six weeks. As a result, they had notably reduced levels of stress and anxiety in comparison to the control group. In addition, they documented enhanced mood, well-being, and sleep quality. A study discovered that Yoga Nidra has positive effects on stress management and reduces anxiety levels in both male and female aged people. Yoga Nidra improves the ability to deal with stress, activates latent abilities, and soothes the entire nervous system, relieving both physical and emotional stress. Stress-related disorders follow a four-stage progression, commencing with anxiety and irritability caused by excessive activation of the sympathetic nervous system.

Stress, as defined, is a state when an organism's ability to adjust is strained, leading to psychological and physiological alterations that can heighten their susceptibility to sickness. The association between stress and hypertension has been hypothesized for a considerable period of time, as stress has the potential to increase both blood pressure and serum cholesterol levels. Psychosocial factors are widely acknowledged to play a role in the development of hypertension by affecting mental processes, whether deliberately or inadvertently. Yoga Nidra is highly effective in facilitating relaxation and stimulating vasodilation, resulting in beneficial physiological alterations. It diminishes cardiac output, workload, blood pressure, and pulse rate, while simultaneously lowering oxygen consumption and metabolic activity. This study proposes that the capacity of Yoga Nidra to promote relaxation and decrease the need for oxygen adds to its efficacy in facilitating vasodilation and reducing blood pressure. Moreover, Yoga Nidra exerts a significant impact on the brain by promoting comprehensive relaxation in the neurological system and bolstering the

resilience of physiological and physical systems. The autonomic nervous system is regulated by it, exerting influence over brain rhythms, heart rate, and blood.

Regularly practicing Yoga Nidra has been proven to be useful in preventing hypertension, a condition sometimes referred to as the silent killer. The current study provides evidence that Yoga Nidra effectively lowers blood pressure in persons with hypertension, in line with other research findings. A study conducted by Kumar K involved 40 individuals with mild hypertension, consisting of 30 males and 10 females. These participants engaged in daily practice of Yoga Nidra over a period of 15 days. The findings demonstrated that consistent practice of Yoga Nidra resulted in significant decreases in blood pressure, along with enhancements in stress levels, anxiety, and overall psychological well-being. A separate pilot study conducted by Vanitha A et al. focused on women diagnosed with polycystic ovarian syndrome (PCOS). The study revealed favourable alterations in blood pressure, heart rate, and anthropometric measurements following a 12-week intervention of Yoga Nidra. These findings indicate that Yoga Nidra could be used as an additional treatment to improve the general health and well-being of women with PCOS. Yoga Nidra is a highly efficient method for reducing blood pressure in people diagnosed with hypertension. Research has demonstrated that it can effectively lower heart rate, respiratory rate, and mitigate feelings of tension, fear, and rage. Yoga Nidra establishes a link between the physical body and the mental faculties. Inducing bodily relaxation has the effect of calming the entire nervous system, whereas inducing relaxation in the central nervous system specifically targets the autonomic nervous system, resulting in a reduction in both physical and mental activity. As brain and muscular activities are reduced, the body's metabolic rate decreases. The study proposes the utilization of Yoga Nidra as an additional relaxation therapy for hypertension. These techniques facilitate a slower and more profound inhalation and exhalation, enhance the circulation of blood, reduce blood pressure and pulse rate, and generate a state of mental relaxation. They counterbalance the impacts of the sympathetic nervous system by activating the parasympathetic nervous system.

#### Conclusion:

Overall, this study emphasizes the notable and advantageous effect of Yoga Nidra in decreasing felt stress among persons diagnosed with hypertension. Yoga Nidra improves the functioning of the autonomic nerve system, resulting in a decrease in the body's stress response and an increase in the relaxation response. This leads to a significant reduction in both the physical and mental effects of stress. In addition to its effect in reducing stress, the regular practice of Yoga Nidra shows potential in managing hypertension, as chronic stress is a recognized factor in the development of high blood pressure. Nevertheless, it is crucial to acknowledge that Yoga Nidra should be used in conjunction with conventional medical interventions for hypertension. Additional research, encompassing extended investigations and rigorous clinical trials, is necessary to thoroughly investigate its potential in the control of blood pressure. In summary, the results emphasize the practical and beneficial function of Yoga Nidra in helping patients with hypertension to achieve a decrease in their perceived stress levels and an increased feeling of relaxation, which ultimately enhances their overall state of health and quality of life.

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