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Research article

Yoga Nidra Combined With Breathing Relaxation and Short-Term Blood Pressure Changes in Adults With Hypertension

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Abstract

Mind–body practices are often investigated as adjuncts to medical blood pressure management. This study examined yoga nidra combined with breathing relaxation and short-term blood pressure changes in adults with hypertension using a three-day, two-group quasi-experimental repeated-measures assessment. The study took place at RSJD dr. Amino Gondohutomo, Central Java, Indonesia, in 2025–2026 and included 56 adults with hypertension, allocated to intervention and control groups of 28 each. The intervention consisted of YONARA, a combined Yoga Nidra and controlled breathing relaxation session repeated on three consecutive days. Outcomes were assessed using daily systolic, diastolic and calculated mean arterial pressure measurements before and after each session. Within-session mean systolic reductions in the intervention group were 9.71, 11.96 and 13.92 mmHg on days one to three; the corresponding day-three diastolic reduction was 10.60 mmHg. Control-group changes were small and inconsistent. The repeated-measures analysis reported significant time-by-group terms for systolic and diastolic blood pressure and mean arterial pressure (reported p values approximately 0.0001). In interpretation, coordinated breathing and relaxation may temporarily reduce physiological arousal, making a short-term change in measured blood pressure plausible. This endpoint captures immediate response and not durable ambulatory blood-pressure control or changes in cardiovascular risk. The design and measurement constraints mean that associations should not be represented as definitive causal effects.

INTRODUCTION

Mind–body practices are often investigated as adjuncts to medical blood pressure management. Yoga Nidra seeks to elicit deep guided relaxation, whereas paced breathing can reduce respiratory effort and perceived arousal. Combining the practices may be acceptable in routine nursing care, but immediate blood pressure changes should be distinguished from durable hypertension control.[1,2,3]

The distinction between knowledge, attitudes, immediate physiological response and enduring patient outcomes is essential when interpreting educational or behavioural interventions. Measures may change because of repeated testing,

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increased attention, changes in care environments or clinical recovery. Consequently, a comparison group and a clearly reported measurement timetable are especially important for evaluating findings of practical nursing interest.[4,5,6,7]
We assessed whether the prespecified outcomes differed during the documented observation period in the populations and services studied. We deliberately distinguish changes over time from adjusted intergroup intervention effects, and statistical significance from clinical importance. This distinction is especially relevant when a study is conducted under routine service conditions rather than using individual randomisation.

METHODS

Study design and setting

The investigation used a three-day, two-group quasi-experimental repeated-measures assessment. It was conducted in RSJD dr. Amino Gondohutomo, Central Java, Indonesia, in 2025–2026. The manuscript retains the allocation scheme described in the source and does not infer randomisation where none was reported. The study was analysed as a pragmatic evaluation of a context-specific nursing intervention, with outcomes measured over the schedule indicated in the thesis.

Participants and allocation

The study enrolled 56 adults with hypertension, allocated to intervention and control groups of 28 each. Participants were enrolled from the stated healthcare services rather than a population-based sampling frame. Because assignment was not random and some study arms were formed at separate facilities or wards, observed arm differences may include differences in case mix, care delivery or baseline exposure. Participants' denominators are reported explicitly where the source provides coherent values.

Intervention and comparison care

The intervention was YONARA, a combined Yoga Nidra and controlled breathing relaxation session repeated on three consecutive days. The comparison condition was routine management without the combined YONARA procedure. As an implementation package, the intervention may combine content, provider contact and changes in delivery format; its separate components cannot be attributed independent effects unless the original design included a factorial or component comparison, which it did not.

Outcome measurement

The prespecified or described measurements were daily systolic, diastolic and calculated mean arterial pressure measurements before and after each session. Outcome direction, categories and units are retained in the Results, and no additional outcome is inferred from the intervention's intended clinical benefit. In particular, a questionnaire result is not treated as proof of a later clinical endpoint; similarly, a single-session physiological response is not equated with long-term disease control.

Statistical analysis

The documented analysis used independent group comparisons and mixed repeated-measures analysis of variance. Two-sided statistical significance is interpreted against the study's stated 0.05 threshold. A reported $p = 0.000$ is expressed as $p < 0.001$ rather than an impossible exact probability of zero. Raw records were not supplied separately; therefore no independent confidence intervals, adjusted estimates or participant-level reanalyses were invented.

RESULTS

Within-session mean systolic reductions in the intervention group were 9.71, 11.96 and 13.92 mmHg on days one to three; the

corresponding day-three diastolic reduction was 10.60 mmHg. Control-group changes were small and inconsistent. The repeated-measures analysis reported significant time-by-group terms for systolic and diastolic blood pressure and mean arterial pressure (reported p values approximately 0.0001).

Table 1. Main study outcomes and changes.

Outcome	Pre-intervention	Post-intervention / change	Additional detail
Systolic reduction, intervention day 1	—	9.71 ± 1.18 mmHg	
Systolic reduction, intervention day 2	—	11.96 ± 2.38 mmHg	
Systolic reduction, intervention day 3	—	13.92 ± 2.03 mmHg	
Diastolic reduction, intervention day 3	—	10.60 ± 2.04 mmHg	

A dash indicates that the specific figure was not reported or is not comparable. P values reflect the statistical results reported for this cohort.

These results are descriptive and inferential findings for the prespecified study context. The table separates pretest measurements from posttest or change measures, avoiding a reinterpretation of category denominators where the source's tabulations conflict. The direction and magnitude of each listed measure should be assessed together with its instrument and the interval between assessments.

DISCUSSION

The most informative finding was that within-session mean systolic reductions in the intervention group were 9.71, 11.96 and 13.92 mmhg on days one to three; the corresponding day-three diastolic reduction was 10.60 mmhg. Although this pattern is consistent with the proposed role of the intervention, the statistical result must be interpreted in terms of the design, exposure period and measurement properties. Nonrandomised comparisons and pretest–posttest observations are useful for studying feasibility and initial signals, but they remain vulnerable to confounding and concurrent changes.[8,9,10,11] Coordinated breathing and relaxation may temporarily reduce physiological arousal, making a short-term change in measured blood pressure plausible. This endpoint captures immediate response and not durable ambulatory blood-pressure control or changes in cardiovascular risk. This explanation is biologically or behaviourally plausible, yet the source data do not test the mechanism directly. It is therefore more appropriate to frame the explanation as a potential pathway than as a demonstrated mediator. Future work should distinguish the core educational or behavioural content from the attention, supervision and accessibility changes that accompany the intervention.

The clinical relevance of the measured outcomes deserves separate scrutiny. A difference in test performance, confidence, adherence score, expressed emotion, pain rating or blood pressure may be worthwhile, but significance alone gives no indication of persistence, implementation cost or downstream patient benefit. Where an endpoint is an intermediate marker rather than the ultimate clinical outcome, research should include longer follow-up and objectively recorded events. Analyses should report effect estimates with uncertainty intervals in addition to p values.[12,13,14,15]

The study also has operational implications for nursing practice. Its context-specific approach can inform local training materials, patient and family communication, and service-level quality improvement. However, applying it in other

populations requires adaptation to resources, literacy, staffing and cultural norms. Implementation should be accompanied by routine monitoring, attention to patient preferences and evaluation of unintended consequences rather than simple replication of the intervention as a fixed package.

Strengths and limitations

A strength is the investigation of an identifiable intervention in a healthcare setting with explicit outcomes. Three days is too short to infer sustained antihypertensive benefit. Lack of randomisation, measurement reactivity, concurrent medication exposure and blinding information may influence the observed contrasts. Additional limitations include the absence of independently available raw datasets for reanalysis and potential reporting variation between prose summaries and statistical tables. The present article therefore privileges directly traceable statistics and does not introduce reconstructed precision.

CONCLUSION

In this study, within-session mean systolic reductions in the intervention group were 9.71, 11.96 and 13.92 mmhg on days one to three; the corresponding day-three diastolic reduction was 10.60 mmhg. The findings support further evaluation of the intervention in comparable clinical or community settings but should not be extended to unmeasured patient outcomes or definitive causation. Future work should standardise outcome scoring, report participant flow and between-group adjusted changes, and assess whether observed changes persist beyond the immediate study period.

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