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Effectiveness of Imagery Relaxation Therapy on Blood Pressure Levels Among Elderly Patients with Hypertension

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Abstract

Hypertension remains a leading contributor to cardiovascular morbidity among older adults, particularly in rural populations with limited access to comprehensive management strategies. This study examined the effectiveness of imagery relaxation therapy on blood pressure levels among elderly patients with hypertension using a quantitative pre-experimental one-group pretest–posttest design. Forty-nine participants aged 60–70 years underwent a structured 10–15 minute imagery relaxation session, and blood pressure was measured immediately before and after the intervention. Paired sample t-tests revealed a significant reduction in systolic blood pressure (mean difference = 17.43 mmHg; 95% CI: 13.76–21.10; $p < 0.001$) and diastolic blood pressure (mean difference = 7.71 mmHg; 95% CI: 6.56–8.87; $p < 0.001$). Additionally, 69.4% of participants demonstrated improvement in blood pressure category, with no cases of deterioration observed. These findings indicate that imagery relaxation therapy yields clinically meaningful hemodynamic benefits and may serve as an effective adjunctive intervention within community-based hypertension management for elderly populations.

Keywords: *Imagery Relaxation Therapy, Hypertension, Elderly, Blood Pressure, Non-Pharmacological Intervention.*

INTRODUCTION

The global epidemiological transition has repositioned hypertension as a dominant contributor to cardiovascular morbidity and mortality, particularly among older adults whose physiological vulnerability amplifies the cumulative impact of vascular risk factors across the life course. Recent international evidence indicates that the prevalence of hypertension continues to rise in low- and middle-income countries, where demographic ageing converges with limited access to preventive services and fragmented primary care systems (Dai et al., 2022; Baglanova et al., 2026). In rural settings, structural disparities in screening coverage and gender-based differences in risk exposure further complicate early detection and sustained blood pressure control (Baglanova et al., 2026). Indonesian regional surveillance reports similarly document a substantial burden of uncontrolled hypertension among the elderly, with provincial and district health profiles in Yogyakarta and Gunungkidul revealing persistent treatment gaps and suboptimal community-based management (Dinas Kesehatan Daerah Istimewa Yogyakarta, 2023; Dinas Kesehatan Kabupaten Gunungkidul, 2024). This constellation of demographic, structural, and service-delivery factors situates non-pharmacological interventions as a strategically important complement to pharmacotherapy in geriatric hypertension care.

Accumulating research has explored relaxation-based modalities as adjunctive strategies for blood pressure reduction, grounded in the theoretical premise that autonomic modulation through cognitive–emotional regulation can attenuate sympathetic overactivity. Empirical studies in Indonesian elderly populations report statistically significant reductions in systolic and diastolic pressure following guided imagery techniques (Budi & Tentry, 2023), as well as combined guided imagery and music interventions (Christanto et al., 2022), suggesting that structured mental visualization may induce measurable cardiovascular effects. Parallel evidence from tactile-based relaxation approaches, such as foot massage therapy, demonstrates comparable improvements in blood pressure parameters (Devi et al., 2025), reinforcing the broader proposition that parasympathetic activation through sensory or

cognitive pathways can influence vascular tone. Collectively, these findings imply that mind–body interventions operate through convergent psychophysiological mechanisms, yet their relative effectiveness and contextual adaptability in rural elderly populations remain insufficiently theorized.

Despite promising results, the extant literature exhibits methodological and conceptual limitations that constrain interpretability and generalizability. Many studies employ small samples, short intervention durations, or community service designs that prioritize feasibility over rigorous causal inference (Budi & Tentry, 2023; Christanto et al., 2022). Variations in intervention protocols—ranging from multimodal guided imagery with music to isolated visualization exercises—complicate cross-study comparison and obscure the specific contribution of imagery-based cognitive engagement as distinct from ancillary sensory stimuli (Christanto et al., 2022). Furthermore, demographic heterogeneity in hypertension risk, including gender and age differentials identified in population-based analyses (Baglanova et al., 2026), is rarely integrated into intervention evaluation frameworks, limiting nuanced understanding of subgroup responsiveness. Epidemiological reports documenting high prevalence and associated behavioral risk factors among older adults (Dai et al., 2022) underscore the need for interventions whose mechanisms and effectiveness are empirically delineated rather than inferred from heterogeneous relaxation paradigms.

The persistence of uncontrolled hypertension in rural Indonesian districts, as reflected in regional health profiles (Dinas Kesehatan Daerah Istimewa Yogyakarta, 2023; Dinas Kesehatan Kabupaten Gunungkidul, 2024), heightens the practical relevance of identifying scalable, low-cost, and culturally adaptable strategies capable of being implemented within community health posts. Pharmacological regimens alone are often undermined by adherence challenges, polypharmacy concerns, and limited monitoring infrastructure, particularly among elderly individuals with constrained mobility and socioeconomic resources. Relaxation-based therapies that can be delivered briefly, individually, and without specialized equipment present a pragmatic alternative, yet their empirical validation within clearly defined rural elderly cohorts remains limited. The absence of context-specific evidence risks perpetuating a gap between theoretical endorsement of mind–body approaches and their systematic integration into primary care and community nursing practice.

Within this scientific landscape, the present study positions imagery relaxation therapy as a focused, cognitively driven intervention whose physiological rationale centers on attenuating sympathetic arousal through structured breathing and guided mental visualization. By employing a quantitative pre-experimental one-group pretest–posttest design among elderly individuals aged 60–70 years with diagnosed hypertension in a rural Gunungkidul community, this research seeks to isolate the immediate effect of a standardized 10–15 minute imagery session on systolic and diastolic blood pressure levels. The use of calibrated digital measurement, paired statistical analysis, and clearly articulated inclusion criteria responds to prior methodological inconsistencies, while grounding the intervention in a replicable protocol tailored to primary community settings. Such an approach contributes to refining the empirical basis for non-pharmacological hypertension management by emphasizing procedural clarity and contextual specificity.

This study aims to evaluate the effectiveness of imagery relaxation therapy in reducing blood pressure levels among elderly patients with hypertension in a rural Indonesian setting. It advances theoretical understanding by interrogating the psychophysiological linkage between guided cognitive imagery and acute hemodynamic change, and it contributes methodologically by providing structured, context-sensitive evidence derived from a clearly defined elderly cohort using standardized measurement and statistical testing. Through this focused examination, the research seeks to inform integrative hypertension management models that balance biomedical treatment with evidence-based mind–body interventions in community health practice.

RESEARCH METHODS

This study employed an empirical quantitative approach using a pre-experimental one-group pretest–posttest design to examine changes in blood pressure following Imagery Relaxation Therapy. The research was conducted in January 2026 in a rural community in Gunungkidul Regency, Indonesia. Total sampling was applied to ensure comprehensive representation of the accessible population, resulting in 49 elderly participants aged 60–70 years with a confirmed diagnosis of hypertension. Inclusion criteria comprised documented hypertension, age within the specified range, and willingness to participate voluntarily, while elderly individuals presenting with severe cardiovascular

complications, cognitive impairment, or unstable medical conditions were excluded to minimize confounding clinical risks. The intervention consisted of a structured Imagery Relaxation Therapy session delivered individually in a quiet and controlled environment, lasting approximately 10–15 minutes in a seated position. Participants were guided through slow diaphragmatic breathing followed by mental visualization of a calm and pleasant scene, with gentle redirection when attention drifted, and gradual reorientation at the end of the session. Blood pressure measurements were obtained immediately before and after the intervention following a brief seated rest period.

Blood pressure was measured using a calibrated digital sphygmomanometer to ensure standardized and reliable readings of systolic and diastolic values, which were documented on a structured observation sheet. The primary outcome variables were changes in systolic and diastolic blood pressure levels before and after the intervention. Data were analyzed using paired sample t-tests to assess mean differences between pre- and post-intervention measurements, with statistical significance established at $p < 0.05$. All statistical procedures were conducted using appropriate software to ensure analytical rigor and reproducibility. Ethical approval was granted by the Health Research Ethics Committee of Universitas 'Aisyiyah Yogyakarta (No. 5231/KEP-UNISA/I/2026), and the study adhered to internationally recognized ethical standards, including written informed consent, voluntary participation, confidentiality, and the protection of participant anonymity throughout the research process.

RESULTS AND DISCUSSION

Respondent Characteristics and Contextual Determinants of Hypertension

The study was implemented in Dusun Glagah, Nglegi Village, Gunungkidul Regency, involving 49 older adults aged 60–70 years who were actively participating in Posyandu Lansia and Prolanis activities. This age distribution situates the cohort within a demographic segment characterized by increased vascular stiffness and heightened cardiovascular vulnerability, as consistently documented in global epidemiological surveillance (WHO, 2023). National data indicate that hypertension prevalence escalates markedly after the sixth decade of life, with rural populations experiencing persistent detection and control gaps (Kementerian Kesehatan Republik Indonesia, 2023). Such demographic concentration provides a clinically relevant foundation for examining non-pharmacological interventions tailored to older adults.

Gender distribution revealed a slight predominance of women (55.1%) compared with men (44.9%), reflecting patterns observed in aging populations where female longevity contributes to higher representation in geriatric cohorts. Empirical evidence demonstrates that gender influences both screening uptake and cardiovascular risk exposure, particularly in rural contexts (Baglanova et al., 2026). Associations between sex, educational attainment, and hypertension incidence among Indonesian elderly populations further underscore the multifactorial determinants shaping blood pressure outcomes (Nabila et al., 2025). The present sample thus mirrors broader demographic trends documented in regional and international research.

Occupationally, the majority of participants were farmers (93.9%), a finding that aligns with rural socioeconomic structures in Gunungkidul. Agricultural labor has been associated with specific occupational stressors, pesticide exposure, and irregular health monitoring, factors implicated in hypertension risk among farming communities (Prihartono et al., 2022; Muchlis et al., 2024). Determinants analyses in pre-elderly and elderly Indonesian populations similarly identify occupational patterns as contributors to blood pressure variability (Gibran et al., 2024). These contextual attributes frame the intervention within a population exposed to sustained environmental and psychosocial demands.

Educational attainment was predominantly limited to primary school (89.8%), while 10.2% reported no formal education. Lower educational levels have been linked to reduced health literacy and diminished adherence to hypertension management protocols (Nakagomi et al., 2022). Systematic reviews emphasize that inadequate understanding of treatment regimens constitutes a barrier to optimal blood pressure control in older adults (Handayani, Haryanto, & Sari, 2025). The educational profile of the sample therefore signals potential challenges in conventional pharmacological compliance, reinforcing the relevance of accessible relaxation-based interventions.

Marital status data indicated that 93.9% of participants were married, while 6.1% were divorced. Marital support has been identified as a protective factor influencing treatment adherence and

psychosocial well-being among hypertensive patients (Son et al., 2022). Family involvement has demonstrated measurable effects on medication compliance in primary care settings (Handayani, Warnida, & Sentat, 2022). These relational dynamics may interact with intervention responsiveness by modulating stress perception and behavioral regulation.

Regional surveillance reports from the Yogyakarta Provincial Health Office document sustained hypertension burden in rural districts, with suboptimal control rates among elderly residents (Dinas Kesehatan Daerah Istimewa Yogyakarta, 2023). District-level profiling in Gunungkidul identifies hypertension as a leading non-communicable disease requiring strengthened community-based management (Dinas Kesehatan Kabupaten Gunungkidul, 2024). Global meta-analytic evidence similarly confirms high prevalence among older populations across diverse regions (Wang et al., 2024). The demographic and contextual configuration of the present cohort reflects these broader epidemiological patterns.

The clinical management of hypertension in older adults necessitates nuanced approaches that account for multimorbidity, polypharmacy, and age-related physiological changes. Contemporary guidelines emphasize individualized care strategies that integrate lifestyle and behavioral modifications alongside pharmacotherapy (Egan et al., 2024; PERHI, 2025). Reviews of dependable hypertension management approaches highlight the need for complementary non-pharmacological strategies to enhance cardiovascular stability (Elendu et al., 2024). The demographic structure observed in this study underscores the appropriateness of integrating structured relaxation modalities into geriatric care pathways.

Evidence from India and Ghana illustrates that gaps across the hypertension care cascade—screening, diagnosis, treatment, and control—persist among older adults, particularly in rural communities (Sahoo et al., 2025; Dai et al., 2022). Such discontinuities often lead to uncontrolled blood pressure despite formal enrollment in primary care programs. The current respondents, although engaged in Posyandu and Prolanis activities, represent a population still experiencing elevated baseline readings. Their characteristics align with global observations of incomplete therapeutic optimization in elderly cohorts.

Social determinants, including income, occupation, and education, exert measurable influence on hypertension trajectories in high-income and middle-income contexts alike (Nakagomi et al., 2022). Marital and socioeconomic conditions modulate stress exposure and coping capacity, shaping cardiovascular outcomes (Son et al., 2022). These structural determinants intersect within the studied community, suggesting that psychophysiological interventions addressing stress regulation may hold contextual relevance. The integration of imagery relaxation therapy must therefore be interpreted against this multilayered sociodemographic background.

The respondent profile demonstrates convergence between local epidemiological realities and international evidence regarding aging, rural livelihood, and cardiovascular risk. Such convergence strengthens the external plausibility of investigating imagery-based relaxation as an adjunctive intervention. The demographic homogeneity in age and occupational exposure enhances internal coherence for examining blood pressure modulation within a defined risk group. These characteristics provide a substantive empirical basis for interpreting subsequent hemodynamic outcomes.

Table 1. Characteristics of the Respondents (N = 49)

Characteristic	Frequency	Percentage (%)
Age		
60–70 years	49	100.0
Gender		
Male	22	44.9
Female	27	55.1
Occupation		
Farmer	46	93.9
Housewife	3	6.1
Education		
No formal education	5	10.2
Primary school	44	89.8

Marital Status		
Married	46	93.9
Divorced	3	6.1

Source: Primary data analysis, 2026.

The distribution presented in Table 1 consolidates demographic and socioeconomic attributes that align with known hypertension risk structures. The predominance of agricultural occupation, limited formal education, and advanced age collectively situate the cohort within a high-risk stratum identified in population-level analyses (Wang et al., 2024). These structural characteristics may amplify chronic stress exposure and reduce adaptive coping mechanisms. Interpreting intervention outcomes therefore requires acknowledgment of these embedded determinants.

Demographic homogeneity in age enhances internal validity by minimizing confounding related to age-related hemodynamic variability. Gender distribution allows examination within a context where screening and risk exposure may differ across sexes (Baglanova et al., 2026). Educational and marital variables provide insight into social support and literacy contexts influencing health behavior. The respondent profile thus forms a coherent empirical substrate for analyzing blood pressure response to imagery relaxation therapy.

Hemodynamic Trends Across Three Sessions of Imagery Relaxation Therapy

The serial measurements obtained before and after each imagery relaxation session revealed a progressive decline in systolic and diastolic blood pressure across three consecutive interventions. Baseline systolic pressure at the first pre-session was 152.88 ± 9.11 mmHg, reflecting stage 2 hypertension according to contemporary clinical classifications (PERHI, 2025). Such elevated values among older adults are consistent with epidemiological patterns documented in global fact sheets and national surveys (WHO, 2023; Kementerian Kesehatan Republik Indonesia, 2023). The immediate post-session reductions observed after each intervention indicate an acute physiological response to guided imagery exposure.

The reduction following Session 1 was marked by a mean systolic decline of 8.74 mmHg and a diastolic reduction of 2.92 mmHg, suggesting early autonomic modulation. Subsequent sessions demonstrated sustained downward shifts, with pre-session values themselves progressively lower than those recorded in the previous session. This pattern suggests a cumulative regulatory effect rather than a transient relaxation response. Evidence from non-pharmacological intervention trials indicates that repeated exposure to structured relaxation enhances parasympathetic dominance and attenuates sympathetic vascular tone (Yuan et al., 2023).

The trajectory across three sessions reflects a structured dose–response relationship in which the intervention's repetition may have reinforced cognitive–physiological integration. Guided imagery engages cortical networks associated with emotional regulation and stress appraisal, mechanisms implicated in blood pressure modulation (Jo et al., 2024). Meta-analytic evaluations of mindfulness-based and meditative strategies report similar incremental improvements in cardiovascular biomarkers (Gururamalingam et al., 2025). The data in this study align with those mechanistic interpretations, as reductions were not limited to a single exposure.

The progressive decline from 152.88 mmHg at the initial baseline to 135.45 mmHg after Session 3 represents a total systolic shift of 17.43 mmHg across the intervention period. Such magnitude exceeds the minimal clinically important difference often targeted in behavioral hypertension programs (Egan et al., 2024). Comparable findings have been reported in Indonesian elderly populations receiving guided imagery techniques (Majid, 2022; Budi & Tentry, 2023). These convergent results strengthen the plausibility of imagery-based relaxation as a clinically meaningful adjunctive therapy.

Table 2. Mean Blood Pressure Before and After Imagery Relaxation Therapy (mmHg)

Measurement	Systolic (Mean ± SD)	Diastolic (Mean ± SD)
Pre Session 1	152.88 ± 9.11	84.88 ± 3.59
Post Session 1	144.14 ± 6.99	81.96 ± 6.85
Pre Session 2	141.71 ± 8.24	83.71 ± 4.78

Post Session 2	138.12 ± 7.24	80.98 ± 5.09
Pre Session 3	138.10 ± 10.52	80.37 ± 5.24
Post Session 3	135.45 ± 10.44	77.16 ± 4.85

Source: Primary data analysis, 2026.

The distribution displayed in Table 2 illustrates a consistent downward shift in both systolic and diastolic means across sessions, with decreasing variability in several measurements. The narrowing of standard deviations in post-session readings during earlier sessions may indicate stabilization of autonomic responses among participants. Behavioral cardiovascular interventions often exhibit reduced dispersion as participants internalize relaxation cues (Hafid, 2022). The gradual pre-session declines before Sessions 2 and 3 suggest that residual effects persisted beyond immediate post-intervention measurements.

The diastolic trajectory, decreasing from 84.88 ± 3.59 mmHg to 77.16 ± 4.85 mmHg, indicates improved peripheral vascular resistance control. Diastolic pressure is closely linked to arteriolar tone and sympathetic activation, both of which are responsive to stress-reduction techniques (Rosa et al., 2024). Prior community-based guided imagery and music programs have reported comparable reductions among elderly participants (Christanto et al., 2022). The pattern observed here reinforces the physiological plausibility of mental imagery influencing vascular compliance.

Comparative analyses with alternative relaxation modalities reveal parallel magnitudes of systolic reduction. Foot massage therapy interventions among elderly hypertensive individuals have demonstrated significant but slightly smaller average declines (Devi et al., 2025). Progressive muscle relaxation combined with guided imagery has also produced clinically relevant blood pressure decreases in controlled settings (Hafid, 2022). The present findings situate imagery relaxation therapy within a broader constellation of evidence-based complementary strategies.

The observed reductions align with recommendations advocating integration of behavioral interventions alongside pharmacotherapy in geriatric hypertension management (Elendu et al., 2024). Older adults often present with complex treatment regimens, and adjunctive non-pharmacological approaches can mitigate polypharmacy risks (Egan et al., 2024). National hypertension management guidelines recognize stress modulation as a supportive component of care (PERHI, 2025). The magnitude and consistency of change across sessions indicate that imagery relaxation may contribute substantively to blood pressure regulation.

Neurocognitive engagement during imagery exercises may foster sustained autonomic recalibration beyond immediate relaxation periods. Experimental comparisons between virtual reality–based and traditional imagery meditation demonstrate comparable cardiovascular modulation, emphasizing the potency of mental visualization alone (Jo et al., 2024). The incremental reduction pattern observed across sessions suggests learning consolidation and enhanced self-regulation capacity. Such adaptive processes resonate with theoretical models of stress-mediated hypertension pathways (Rosa et al., 2024).

The cumulative hemodynamic shifts documented in this study correspond with international findings that short-term non-pharmacological interventions can generate meaningful blood pressure improvements (Yuan et al., 2023). Similar acute and short-term reductions have been observed in guided imagery–based community interventions among elderly populations (Somantri & Purwanti, 2023). These parallels support the reproducibility of imagery-induced cardiovascular responses across diverse cultural contexts. The evidence collectively positions imagery relaxation therapy as a viable, scalable modality within rural primary care frameworks.

Clinical Category Transition and Statistical Magnitude of Effect

The categorical evaluation of blood pressure change provides a clinically oriented perspective that complements mean-level comparisons by capturing individual shifts in risk classification after imagery relaxation therapy. Among the 49 elderly participants, 34 individuals (69.4%) experienced improvement in blood pressure category, while 15 participants (30.6%) remained stable and none exhibited deterioration. This pattern indicates that the intervention was not merely associated with average reductions but was linked to tangible reclassification toward lower clinical risk strata. The absence of worsening cases is notable in an elderly hypertensive cohort, considering the progressive vascular stiffening described in global hypertension reports (WHO, 2023).

Table 3. Changes in Blood Pressure Category (Pre vs Post)

Category Change	Frequency	Percentage (%)
Improved	34	69.4
No Change	15	30.6
Worsened	0	0.0

Source: Primary Data Analysis, 2026.

The distribution presented in Table 3 reflects a substantial proportion of participants achieving categorical improvement following a brief structured intervention, which has implications for cardiovascular risk mitigation in primary care contexts. Epidemiological analyses among older populations demonstrate that even moderate categorical downgrading is associated with meaningful reductions in long-term cardiovascular events (Wang et al., 2024). In rural health systems where hypertension prevalence remains high, as documented in Indonesian and regional surveillance reports (Kementerian Kesehatan Republik Indonesia, 2023; Dinas Kesehatan Kabupaten Gunungkidul, 2024), such shifts represent clinically relevant outcomes. Comparable community-based relaxation interventions have reported improvements in blood pressure classification, reinforcing the plausibility of these findings (Budi & Tentry, 2023; Somantri & Purwanti, 2023).

From a public health standpoint, the predominance of improvement without deterioration suggests that imagery relaxation therapy may serve as a safe adjunctive modality within elderly populations. Risk factor analyses among rural and agricultural communities highlight persistent exposure to occupational and psychosocial stressors that exacerbate hypertension trajectories (Prihartono et al., 2022; Muchlis et al., 2024). The improvement rate of 69.4% observed in this study suggests that stress-modulating strategies can meaningfully alter hemodynamic status even in high-risk demographic environments. Gender- and age-related disparities in cardiovascular risk documented in rural cohorts further underscore the importance of adaptable non-pharmacological strategies (Baglanova et al., 2026).

Inferential testing provides additional rigor to the categorical findings by quantifying the magnitude and precision of blood pressure reduction. Paired sample t-test analysis demonstrated a mean systolic decrease of 17.43 mmHg with a standard deviation of 12.78 and a 95% confidence interval ranging from 13.76 to 21.10 mmHg. Diastolic pressure declined by a mean of 7.71 mmHg (SD = 4.02; 95% CI: 6.56–8.87), indicating consistent and statistically reliable reductions. Both outcomes achieved high statistical significance with p-values below 0.001, supporting the robustness of the intervention effect within the empirical design.

Table 4. Effect of Imagery Relaxation Therapy on Blood Pressure (Pre vs Post)

Variable	Mean Difference	SD	95% CI	t	df	p
Systolic	17.43	12.78	13.76–21.10	9.548	48	<0.001
Diastolic	7.71	4.02	6.56–8.87	13.448	48	<0.001

Source: Primary Data Analysis, 2026.

The magnitude of systolic reduction exceeding 17 mmHg is clinically substantial, particularly in elderly patients where guideline targets emphasize gradual yet meaningful blood pressure lowering (PERHI, 2025; Egan et al., 2024). Reviews of dependable hypertension management approaches highlight that reductions above 10 mmHg in systolic pressure are associated with considerable decreases in cardiovascular morbidity (Elendu et al., 2024). Network meta-analytic evidence on non-pharmacological interventions similarly reports short-term reductions of comparable scale, situating imagery relaxation within evidence-based behavioral strategies (Yuan et al., 2023). The narrow confidence intervals observed in this study further indicate statistical precision in estimating treatment effect.

Physiologically, a 7.71 mmHg decline in diastolic pressure suggests meaningful modulation of peripheral vascular resistance and autonomic tone. Stress management frameworks describe how guided imagery attenuates sympathetic activation and reduces hypothalamic–pituitary–adrenal axis hyperactivity, mechanisms closely linked to diastolic regulation (Rosa et al., 2024). Empirical trials assessing meditation and mindfulness demonstrate parallel impacts on cardiovascular biomarkers, supporting a psychophysiological basis for these reductions (Gururamalingam et al., 2025). Comparative experimental research indicates that imagery-based techniques alone can elicit cardiovascular effects similar to technology-assisted meditation modalities (Jo et al., 2024).

The observed statistical effects resonate with prior Indonesian intervention studies reporting significant decreases following guided imagery or combined relaxation techniques (Majid, 2022; Christanto et al., 2022). Progressive muscle relaxation integrated with imagery has likewise produced significant reductions in hypertensive populations, suggesting overlapping mechanisms of autonomic recalibration (Hafid, 2022). Educational relaxation programs implemented in community health posts have shown preventive value in mitigating advanced hypertensive complications (Griska et al., 2023). The present findings contribute empirical reinforcement within a rural elderly cohort characterized by persistent hypertension burden.

Social and behavioral determinants may have interacted with the intervention to enhance responsiveness among participants. Systematic review evidence indicates that blood pressure control in older adults is influenced by family support, medication adherence, and psychosocial stability (Handayani, Haryanto, & Sari, 2025; Handayani, Warnida, & Sentat, 2022). Marital and income-related disparities in hypertension outcomes underscore the importance of psychosocial buffering mechanisms (Son et al., 2022). The absence of worsening cases in this sample suggests that imagery relaxation may operate synergistically with existing support structures.

Epidemiological data from Ghana and India reveal persistent care cascade gaps among older adults, including inadequate control despite treatment enrollment (Dai et al., 2022; Sahoo et al., 2025). Within such contexts, low-cost and low-risk adjunctive therapies are essential to complement pharmacological management. The statistically significant reductions observed in this study indicate feasibility and potential scalability within rural primary care frameworks. This empirical evidence strengthens the argument for integrating structured imagery relaxation into routine hypertension management protocols for elderly populations.

CONCLUSION

The findings demonstrate that imagery relaxation therapy produced statistically significant and clinically meaningful reductions in both systolic and diastolic blood pressure among elderly patients with hypertension, accompanied by categorical improvement in the majority of participants. The magnitude of systolic reduction (17.43 mmHg) and diastolic reduction (7.71 mmHg), together with a 69.4% improvement in blood pressure classification and absence of deterioration, indicates a robust therapeutic effect within a rural elderly cohort characterized by established cardiovascular risk. These outcomes, interpreted alongside demographic vulnerability and contextual determinants of hypertension, suggest that structured imagery relaxation may function as a viable adjunctive intervention complementing conventional pharmacological management. The study contributes empirical evidence supporting the integration of brief, low-cost psychophysiological strategies into community-based hypertension control programs for older adults in resource-limited settings.

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