RESEARCH PAPER

Effectiveness of Raj Yoga Meditation on the Level of Stress among Elderly People Residing in Selected Old Age Homes: A Quasi-Experimental Study

Ms. Sayali Manohar Mehar[1*], Mrs Siddeshwari Barbatkar[2], Mrs Suman Azad[3], Ms Aishwarya Dhote[4]

[1]Department of Mental (Psychiatric) Health Nursing, VSPM MDINE, Nagpur

[2]Professor and Head of the Department of Mental Health Nursing, VSPM MDINE, Nagpur.

[3]Associate Professor of Mental Health Nursing, VSPM MDINE, Nagpur.

[4]Assistant Professor, VSPM MDINE, Nagpur

*Corresponding Author: Ms. Sayali Manohar Mehar

Received: 25th Aug, 2026 | Revised: 1st Sep, 2026 | Accepted: 5th Sep, 2026 | Available Online: 7th Oct, 2026

ABSTRACT

Stress is a common psychological concern among elderly people, particularly those residing in old age homes, where separation from family, loneliness, dependency, chronic health problems, and adjustment to institutional living may affect emotional well-being. Raj Yoga Meditation is a simple, non-pharmacological practice that may promote relaxation, positive thinking, emotional stability, and stress reduction among older adults.

Aim: The study aimed to assess the effectiveness of Raj Yoga Meditation on the level of stress among elderly people residing in selected old age homes.

Methods: A quantitative approach with a quasi-experimental, non-randomized pre-test–post-test control group design was adopted. A total of 60 elderly people were selected using a non-probability convenience sampling technique and divided into an experimental group (n=30) and a control group (n=30). Stress was assessed using the standardized 10-item Perceived Stress Scale. After the pre-test, participants in the experimental group received Raj Yoga Meditation for 14 days, while the control group continued their usual routine. Post-test stress assessment was conducted on the 14th day using the same scale. Data were analyzed using descriptive and inferential statistics.

Results: In the experimental group, the mean stress score decreased from 26.36 ± 4.58 in the pre-test to 16.56 ± 3.09 in the post-test. The mean reduction was 9.80 ± 5.50 and was statistically significant (t=9.75, p=0.0001). In the control group, the mean stress score decreased from 24.43 ± 5.05 to 20.63 ± 4.12. Comparison of mean change scores between the two groups showed a significant difference (t=4.19, p=0.0001), indicating greater stress reduction in the experimental group.

Conclusion: Raj Yoga Meditation was found to be an effective, feasible, and non-pharmacological intervention for reducing stress among elderly people residing in old age homes. It can be incorporated into routine geriatric care to promote psychological well-being and healthy ageing.

Key words: Raj Yoga Meditation; Stress; Elderly People; Old Age Home; Perceived Stress Scale

How to cite this article: Sayali Manohar Mehar, Siddeshwari Barbatkar, Suman Azad, Aishwarya Dhote. Effectiveness of Raj Yoga Meditation on the Level of Stress among Elderly People Residing in Selected Old Age Homes: A Quasi-Experimental Study. Int J Drug Deliv Technol. 2026;16(89s):1636-1640. DOI: 10.25258/ijddt.16.89s.171.

INTRODUCTION

Ageing is a natural and inevitable biological process associated with progressive changes in physical health, psychological functioning, social roles and coping capacity.. According to the World Health Organization (WHO), approximately 1.1 billion people worldwide were aged 60 years or above in 2023, and this number is expected to reach about 2.1 billion by 2050. In 2023, approximately 14.75% of adults aged 70 years and above were living with a mental disorder, with anxiety and depression being among the most common conditions [1]. Social isolation and loneliness, which affect nearly one-fourth of older people, further increase their psychological vulnerability.

India is also experiencing a marked demographic transition. The India Ageing Report 2023 indicates that the elderly population is growing at a decadal rate of approximately 41%, and persons aged 60 years and above are projected to constitute more than 20% of India's population by 2050 [2]. Stress is not merely an emotional experience; it involves activation of the autonomic nervous system and hypothalamic-pituitary-adrenal axis, resulting in the release of stress hormones such as cortisol. Persistent activation of these systems may contribute to increased allostatic load and adversely affect cardiovascular, metabolic, immune and psychological functioning [3]. Age-related changes in the HPA axis may further influence cortisol regulation and stress resilience in older adults [4]. An Indian study involving 311 elderly residents of

old age homes in Chennai reported stress in 55.9%, anxiety in 49.2%, and depression in 84.2% of participants [5].

Raj Yoga Meditation is a non-pharmacological meditative practice involving focused awareness, positive thinking, self-reflection and mental relaxation. Research indicates that meditation-based interventions may improve psychological well-being and reduce negative dimensions of stress. Therefore, evaluating Raj Yoga Meditation among elderly residents of old age homes may provide scientific evidence for an accessible and supportive approach to stress management.

Need for the Study

Psychological stress among elderly people requires attention because prolonged stress can adversely influence physical health, emotional well-being, functional ability and quality of life.[1].

The magnitude of this problem is demonstrated by Indian evidence. Ramesh et al. studied 311 residents aged 60 years and above in old age homes in Chennai and found that 55.9% experienced stress, 49.2% anxiety and 84.2% depression [5]. Such findings indicate that psychological distress is not an isolated occurrence but a substantial health concern among institutionalized elderly people. Moreover, India's rapidly increasing elderly population means that the demand for feasible geriatric mental-health interventions is likely to increase considerably [2].

Non-pharmacological interventions are particularly relevant in this age group because they can complement routine care without adding to medication burden. In a randomized study involving 134 stressed adults aged 50–85 years, six weeks of mindfulness meditation produced significant improvements in perceived stress, depressive symptoms and mental-health-related quality-of-life measures compared with a wait-list control group [6].

Recent evidence from institutional settings is also encouraging. Lakshmanan et al. conducted a quasi-experimental study among 48 elderly people in two old age homes. After a 12-week mindfulness intervention, 83.33% of participants in the experimental group had low stress compared with only 12.50% in the control group ($p=0.001$). The experimental group's mean stress score decreased from 22.79 ± 2.11 to 11.38 ± 2.20 ($t=20.96$, $p=0.001$) [7].

Evidence specifically related to Raj Yoga is also emerging. Madhu et al. compared 802 Raj Yoga meditators with 357 non-meditators and reported lower stress, anxiety, depression and impact of stressful events among meditators [8].

Aim of the Study

To assess the effectiveness of Raj Yoga Meditation on the level of stress among elderly people residing in selected old age homes.

Objectives of the Study

Primary Objective

To assess the effectiveness of Raj Yoga Meditation on the level of stress among elderly people residing in selected old age homes in the experimental group.

Secondary Objectives

1. To compare the pre-test and post-test levels of stress among elderly people in the experimental and control groups.
2. To compare the post-test level of stress between elderly people in the experimental group and the control group.
3. To determine the association between the pre-test level of stress and selected demographic variables among elderly people in the experimental and control groups.

RESEARCH METHODOLOGY

Research approach: Quantitative research approach.

Research type: Evaluative study.

Research design: Quasi-experimental, non-randomized pre-test–post-test control group design.

Research setting: Selected old age homes in the city.

Sample and sample size: 60 elderly people aged 60 years and above, with 30 participants each in the experimental and control groups.

Sampling technique: Non-probability convenience sampling technique.

Data collection tool: Section I included a semi-structured demographic questionnaire. Section II consisted of the 10-item Perceived Stress Scale (PSS-10), used to assess perceived stress. The experimental group received Raj Yoga Meditation for 14 days, while the control group continued its usual routine.

Reliability: The reported reliability coefficient was $r=0.9674r = 0.9674r=0.9674$, indicating high reliability.

Pilot study: A pilot study was not mentioned in the provided methodology; therefore, its conduct cannot be confirmed.

Data analysis: Frequency, percentage, mean, standard deviation, paired t-test, independent-samples t-test, and Chi-square or Fisher’s exact test, as appropriate.

RESULT

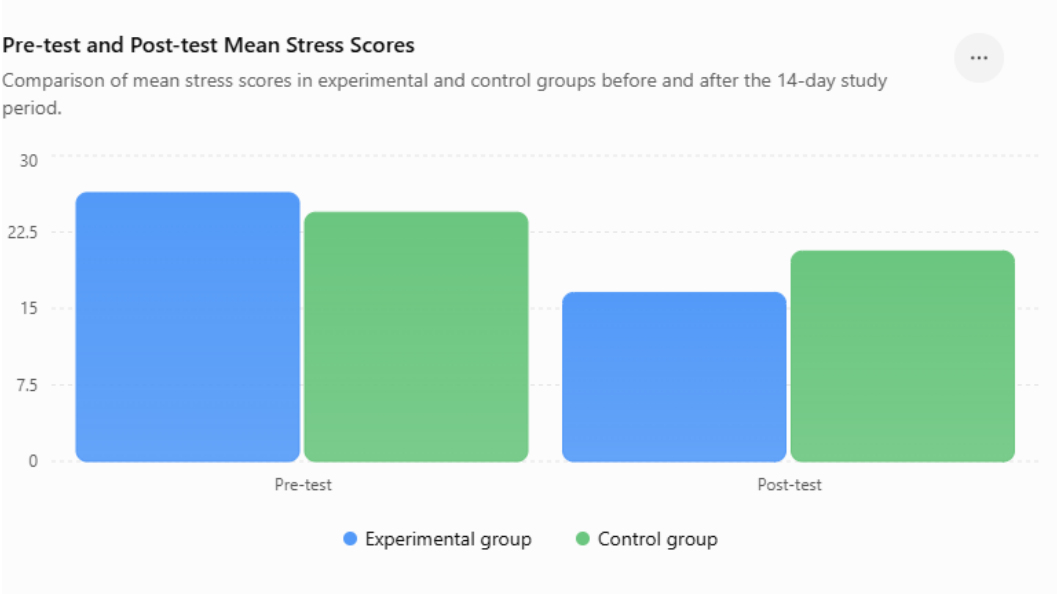
The results are presented to assess the effectiveness of Raj Yoga Meditation in reducing stress among elderly people residing in selected old age homes. The analysis is based on 60 participants, comprising 30 in the experimental group and 30 in the control group. The results include the distribution of stress levels before and after the intervention, comparison of mean stress scores, and statistical evaluation of the intervention's effectiveness. Demographic and association tables are excluded as requested.

Table 1. Distribution of Stress Levels Among Elderly People in the Experimental and Control Groups

N = 60; experimental group = 30; control group = 30

Level of stress	Score range	Experimental pre-test n (%)	Experimental post-test n (%)	Control pre-test n (%)	Control post-test n (%)
Low stress	0–13	0 (0%)	7 (23.33%)	0 (0%)	1 (3.33%)
Moderate stress	14–26	16 (53.33%)	23 (76.67%)	20 (66.67%)	27 (90.00%)
High perceived stress	27–40	14 (46.67%)	0 (0%)	10 (33.33%)	2 (6.67%)

Interpretation: In the experimental group, the proportion of elderly participants with high stress decreased from 46.67% in the pre-test to 0% in the post-test. Meanwhile, 23.33% achieved a low stress level after Raj Yoga Meditation. In the control group, high stress decreased from 33.33% to 6.67%, while most participants (90%) continued to experience moderate stress in the post-test. These findings indicate a more substantial improvement in stress levels in the experimental group. These findings indicate a more substantial improvement in stress levels in the



.Figure 1. Comparison of Mean Stress Scores Before and After the Interventi

Pre-test and Post-test Mean Stress Scores

Comparison of mean stress scores in experimental and control groups before and after the 14-day study period.

Interpretation: The experimental group's mean stress score decreased from 26.36 to 16.56, whereas the control group's mean score decreased from 24.43 to 20.63. The greater reduction in the experimental group suggests that Raj Yoga Meditation was beneficial in reducing stress among elderly participants.

Table 2. Comparison of Pre-test and Post-test Stress Scores in the Experimental and Control Groups

Group	Pre-test mean ± SD	Post-test mean ± SD	Mean reduction ± SD	t-value	p-value
Experimental (n = 30)	26.36 ± 4.58	16.56 ± 3.09	9.80 ± 5.50	9.75	0.0001
Control (n = 30)	24.43 ± 5.05	20.63 ± 4.12	3.80 ± 5.57	3.73	0.001

Source: Study data provided in the manuscript.

Interpretation: The experimental group demonstrated a statistically significant reduction in stress, with a mean decrease of 9.80 points ($t = 9.75$, $p = 0.0001$). The control group also showed a significant reduction of 3.80 points ($t = 3.73$, $p = 0.001$). The reported between-group comparison of mean reductions was statistically significant ($t = 4.19$, $p = 0.0001$), supporting the effectiveness of Raj Yoga Meditation.

Overall result: The findings indicate that Raj Yoga Meditation was associated with a greater reduction in stress among elderly people in the experimental group than in the control group.

Statistical note: The reported between-group comparison is included as stated in the manuscript. Before submission, verify the test used and its degrees of freedom against the original statistical output.

Pre-test and Post-test Mean Stress Scores

Comparison of mean stress scores in experimental and control groups before and after the 14-day study period.

assessment	experimental	control
Pre-test	26.36	24.43
Post-test	16.56	20.63

DISCUSSION

The present study was conducted to assess the effectiveness of Raj Yoga Meditation on the level of stress among elderly people residing in selected old age homes. A total of 60 elderly participants were included, with 30 participants each in the experimental and control groups. The findings demonstrated that Raj Yoga Meditation was effective in reducing stress among elderly people over the 14-day intervention period.

In the experimental group, the mean stress score decreased from 26.36 ± 4.58 in the pre-test to 16.56 ± 3.09 in the post-test, with a mean reduction of 9.80 ± 5.50. This difference was statistically significant ($t = 9.75$, $p = 0.0001$). Furthermore, the proportion of participants with high stress decreased from 46.67% before the intervention to 0% after the intervention, while 23.33% of participants achieved a low stress level. These findings indicate considerable improvement in perceived stress following Raj Yoga Meditation.

In the control group, the mean stress score decreased from 24.43 ± 5.05 to 20.63 ± 4.12, with a mean reduction of 3.80 ± 5.57 ($t = 3.73$, $p = 0.001$). Although some improvement was observed, 90% of participants continued to experience moderate stress at post-test, and 6.67% remained in the high-stress category. The reported between-group comparison of mean stress reduction was statistically significant ($t = 4.19$, $p = 0.0001$), suggesting a greater reduction in stress in the experimental group than in the control group.

These findings are consistent with the study by Lakshmanan et al., which reported significant stress reduction following a mindfulness-based intervention among elderly residents of old age homes. Similarly, Madhu et al. reported lower stress among Raj Yoga meditators than non-meditators. These studies provide supportive evidence for meditation-based approaches to stress management among older adults.

Overall, the present findings suggest that Raj Yoga Meditation may be a useful, non-pharmacological approach to promoting psychological well-being among elderly people. However, the study was limited by its small sample size, convenience sampling and non-randomized design. Further studies involving larger samples and longer follow-up periods are recommended to establish the sustained effectiveness of the intervention.

CONCLUSION

The present study concluded that Raj Yoga Meditation is an effective approach for reducing stress among elderly people residing in old age homes. Elderly individuals often experience emotional strain due to ageing, separation from family, loneliness, dependency, changes in their social roles, and adjustment to institutional living. These factors may influence their psychological well-being and quality of life.

Regular practice of Raj Yoga Meditation helped the elderly participants experience greater mental calmness, relaxation, emotional balance, and a more positive state of mind. The intervention provided them with an opportunity to focus their thoughts, reduce mental tension, and develop better control over stressful feelings. The improvement observed among the elderly participants suggests that Raj Yoga Meditation can be used as a simple and supportive measure for promoting psychological well-being.

The study also highlights the importance of addressing stress as part of holistic geriatric care. Raj Yoga Meditation is easy to practice, economical, non-invasive, and does not require complex equipment. Therefore, it can be incorporated into the daily routine of old age homes as a complementary activity. Nurses and caregivers can play an important role in encouraging elderly people to practice meditation regularly to promote emotional comfort, mental peace, and healthy ageing.

Conflict of Interest: The authors certify that they have no involvement in any organization or entity

with any financial or non-financial interest in the subject matter or materials discussed in this paper.

Funding Source: There is no funding Source for this study

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