Jurnal Keperawatan Muhammadiyah

Alamat Website: http://journal.um-surabaya.ac.id/index.php/JKM

Effectiveness of a Yoga-Based Intervention in Alleviating Depressive Symptoms Among Older Adults: A Case Study

Arina Desi A[1], Musrifatul Uliyah[1], Ade Susanty [1]

[1] *Department of Nursing, University Muhammadiyah of Surabaya, Surabaya, East Java, Indonesia.*

INFORMASI

Korespondensi:

musrifatul@um-surabaya.ac.id

Keywords:
Geriatric Depression; Yoga Intervention; Non-Pharmacological Treatment; Elderly Mental Health; Geriatric Depression Scale (Gds)

ABSTRACT

This study examines the effectiveness of a yoga-based intervention in reducing depressive symptoms in two elderly individuals with moderate depression residing at Griya Werdha Nursing Home in Surabaya, Indonesia.

A case study approach was employed, implementing a four-day yoga program with daily sessions lasting 30–40 minutes. Depression levels were assessed using the Geriatric Depression Scale (GDS) before and after the intervention.

Both participants demonstrated a marked decrease in GDS scores, transitioning from moderate depression to a non-depressed state. The observed improvement is attributed to enhanced physical and psychological functioning, along with potential reductions in cortisol levels.

These findings suggest that yoga may represent a safe and effective non-pharmacological approach for managing depression in older populations.

INTRODUCTION

Depression is among the most prevalent emotional disorders affecting the elderly, characterized by persistent low mood, diminished interest in activities, and impaired social functioning. In older adults, depressive symptoms often extend beyond emotional manifestations and may include somatic complaints, reduced appetite, and overall functional decline. This condition is frequently underdiagnosed, as it is commonly misattributed to normal aging processes or comorbid chronic illnesses. Nonetheless, timely recognition and appropriate intervention are essential to improving the quality of life and psychological well-being of the elderly population (Fava, 2003; Sackeim, 2001).

With the global aging population on the rise, age-associated psychological conditions have become increasingly prominent. According to the World Health Organization (WHO), depression is a major mental health issue among older adults, contributing significantly to the global disease burden. Globally, the prevalence of depression in this demographic ranges from 8% to 15%, whereas in Indonesia, it is notably higher, estimated between 17% and 27%. Among elderly individuals in institutional settings, such as hospitals or nursing homes, prevalence rates may reach as high as 30% to 45%. In East Java specifically, recent data indicate a depression prevalence of 7.18% among older adults (Livana et al., 2018).

Late-life depression is typically associated with symptoms such as anhedonia, feelings of guilt or worthlessness, disturbances in sleep and appetite, and cognitive decline. Behavioral indicators may include frequent crying, anxiety, irritability, and social withdrawal. If left untreated, depression in the elderly can lead to severe outcomes, including reduced life expectancy, worsening of physical health conditions, impediments in psychosocial development, and increased suicide risk (Setyarini et al., 2022).

To address these challenges, both pharmacological treatments—such as antidepressants and anxiolytics—and non-pharmacological interventions are utilized. Among the latter, behavioral therapies, cognitive approaches, and relaxation techniques have shown promise. Yoga, in particular, is a holistic practice that integrates physical postures (asanas), controlled breathing (pranayama), and meditative awareness, aiming to harmonize the body, mind, and spirit. Its low-impact nature makes it especially suitable for older populations (Hishikawa et al., 2019; Lee et al., 2019). Empirical evidence supports the effectiveness of yoga in mitigating depressive symptoms among the elderly. For example, Chen et al. (2010) reported significant reductions in depression levels and improvements in sleep quality among elderly individuals residing in long-term care facilities following a structured yoga intervention administered three times per week over a 24-week period (Chen et al., 2010). The intervention demonstrated statistically significant differences between the intervention and control groups ($p < 0.05$), highlighting yoga's therapeutic value.

Given the existing evidence, yoga emerges as a promising non-pharmacological modality to enhance mental health in older adults. Accordingly, the present study aims to further investigate the impact of yoga-based interventions on depression levels among elderly individuals residing in institutional care.

METHODS

This study adopted a qualitative case study design to evaluate the effects of a yoga intervention on depressive symptoms in two elderly individuals diagnosed with moderate depression. The participants, aged 67 and 80 years, respectively, were residents of Griya Werdha Nursing Home in Surabaya, East Java, Indonesia. Both individuals were physically capable of performing yoga and did not exhibit any impairments in mobility or activities of daily living. Depression levels were assessed pre- and post-intervention using the Geriatric Depression Scale (GDS), a validated instrument commonly employed in geriatric mental health evaluations.

The intervention consisted of a structured yoga program delivered over four consecutive days. Each session lasted approximately 30 to 40 minutes and was divided into three sequential phases: warm-up, core postures, and cool-down. All sessions were guided by an instructor and tailored to suit the participants' physical capabilities.

2.1 Warm-Up Phase

The warm-up phase aimed to gently prepare the body for physical activity and consisted of the following movements:

1. Participants sat upright with legs slightly apart.
2. While remaining seated, both arms were raised overhead and arms and legs were swung alternately in coordination.
3. Arms were then lifted sideways to shoulder height and swung gently outward for several repetitions.
4. Finally, both arms were alternately lifted and lowered above the head.

2.2 Core Yoga Postures

This phase involved a series of foundational yoga poses designed to enhance flexibility, strength, and breath awareness:

1. Sukhasana (Easy Pose): A seated, cross-legged posture with hands resting on the knees; participants maintained an erect spine while performing slow, deep breathing.
2. Garudasana (Eagle Pose): Executed in a seated cross-legged position; the left arm was wrapped around the right, and the elbows were raised to shoulder level.
3. Salabhasana (Locust Pose): Performed while lying prone; both legs and the head were lifted simultaneously.
4. Dhanurasana (Bow Pose): Also performed in a prone position; participants extended both arms upward and concurrently lifted their arms, legs, and head off the mat.
5. Utkatasana (Chair Pose): Executed from a squatting stance; participants leaned forward with palms pressed together above the head.
6. Crescent Lunge Pose: One leg stepped forward and the other back, with the front knee bent and both arms extended vertically overhead.
7. Savasana (Corpse Pose): A final resting posture performed supine, with legs relaxed and slightly apart, and toes naturally turned outward.

2.3 Cool-Down Phase

This phase facilitated relaxation and mental focus, involving the following activities:

1. Lying supine with arms at the sides and palms facing upward, participants practiced slow, deep breathing.
2. The soles of the feet were joined together, held momentarily while maintaining an upright posture.
3. Both knees were bent toward the chest and held briefly.
4. Participants then extended their arms overhead while maintaining a supine position and engaged in diaphragmatic breathing with guided visualization of calming thoughts.
5. Each session concluded with a reflective discussion emphasizing geriatric care and evaluating the perceived effectiveness of the yoga practice in alleviating depressive symptoms.

RESULTS

Assessment of depression levels before and after the intervention indicated a substantial reduction in depressive symptoms for both participants. Following four consecutive days of yoga sessions, both Case A and Case B exhibited marked improvements, transitioning from moderate depression to a non-depressed classification based on scores from the Geriatric Depression Scale (GDS). Each assessment was conducted over a 30-minute observation period and administered by a trained professional.
The detailed GDS scores across the four-day intervention period are presented in Table 1.

The findings of this case study revealed that depressive symptoms in both participants significantly decreased by the fourth day of the yoga intervention. Initially, Case A presented with moderate depression, as indicated by elevated scores on the Geriatric Depression Scale (GDS), along with emotional indicators such as sadness and low self-worth. Psychological evaluation suggested that the depressive state was largely driven by psychosocial stressors, particularly feelings of abandonment by a family member who placed the individual in institutional care without fulfilling promises of return. These experiences of betrayal and isolation likely contributed to sustained emotional distress and diminished self-esteem.

Similarly, Case B also exhibited moderate depression at baseline, with key emotional features including helplessness and hopelessness about the future. These symptoms were rooted in familial rejection, the death of a spouse, and the withdrawal of caregiving responsibilities by an older sibling. Internalizing these events, the participant perceived themselves as a burden, leading to self-isolation and exacerbation of depressive symptoms.

These individual narratives highlight the crucial role of family-related psychosocial factors in the development and persistence of depression among older adults. The emotional improvements observed following the yoga intervention suggest that holistic, non-pharmacological strategies such as yoga may effectively address both physiological and psychological components of geriatric depression.

Yoga practice offers multifaceted benefits for physical and psychological well-being. Physiologically, it enhances muscle strength, flexibility, and postural balance, while also supporting efficient breathing patterns. Proper breath regulation is essential for autonomic stability and internal organ function, including the heart, lungs, liver, and gastrointestinal

system. By promoting internal equilibrium, yoga contributes to increased vitality and energy flow.

Psychologically, yoga has been shown to reduce stress and depressive symptoms, which are frequently associated with aging and negative life events. The combination of physical movement, breathwork, and meditative focus promotes cognitive clarity, emotional resilience, and improved attention. These outcomes are not merely the result of exercise but stem from yoga's integrative philosophy, which emphasizes inner harmony, connection to nature, and disciplined self-awareness. In the context of contemporary psychosocial pressures, yoga represents a meaningful intervention to foster mental health and emotional regulation.

Table 1. Depression scores before and after a 4-day yoga exercise intervention

Day	Before yoga exercise intervention		After yoga exercise intervention	
	Case A		Case B	
	Depression Level	GDS Score	Depression Level	GDS Score
Day 1	Moderate Depression	23	Moderate Depression	21
Day 2	Moderate Depression	20	Moderate Depression	20
Day 3	Moderate Depression	12	Moderate Depression	11
Day 4	Normal/not depression	9	Normal/not depression	10

Over the course of the four-day intervention, differences in engagement and physical response were observed. Case A, being younger and more physically active, demonstrated higher participation and independence during sessions. Although certain poses such as *Garudasana*, *Salabhasana*, and *Dhanurasana* required assistance due to age-related limitations, the participant completed most movements unassisted. Conversely, Case B encountered initial difficulty with several poses and required support during the cool-down phase, particularly when synchronizing movement with breathing. Nonetheless, by the final session, both participants were able to perform the full yoga sequence independently, reflecting increased confidence and adaptability.

DISCUSSION

Mechanism of Depression Reduction through Yoga Exercise

The therapeutic impact of yoga on depression may be attributed to its regulation of neuroendocrine function, specifically its effect on cortisol levels. Chronic, untreated depression has been associated with hypersecretion of cortisol a stress hormone produced by the adrenal cortex (zona fasciculata) which contributes to elevated blood pressure, hyperglycemia, and sustained physiological arousal.

Extensive research has established a link between depression and hypercortisolemia, which is often mediated by overactivation of the hypothalamic pituitary adrenal (HPA) axis. Elevated cortisol is a common biomarker in both acute stress reactions and prolonged depressive states. Adverse life events such as grief, abandonment, or caregiving loss can trigger this dysregulation and perpetuate depressive symptoms.

Yoga practice, particularly when performed consistently for 30–40 minutes per session, three to four times per week, has demonstrated efficacy in reducing cortisol levels and modulating the autonomic nervous system. Through the integration of postural exercises, controlled breathing, and meditative awareness, yoga fosters emotional equilibrium and physiological recovery. This mechanism supports its role as a viable, non-pharmacological alternative in the treatment of depression (Hishikawa et al., 2019). Rooted in the Ayurvedic tradition, yoga is recognized as both a physical and spiritual discipline aimed at achieving harmony between the body and mind. Its fundamental objective is to cultivate optimal physical health, psychological stability, and moral resilience. Daily practice is designed to foster inner peace, emotional endurance, and sustained happiness—qualities that enable individuals to engage with life more meaningfully (Avasthi & Grover, 2018; Bonura & Pargman, 2009; Shahidi et al., 2011)

In this study, post-intervention assessments conducted approximately 30 minutes after each session using observation checklists and standardized instruments revealed that both participants experienced a notable reduction in depression severity, transitioning from moderate to non-depressed states. Their focused participation, gradual progression, and adherence to instructor-led guidance were key factors in achieving these outcomes. Moreover, both individuals reported experiencing enhanced relaxation, mental clarity, and a sense of physical rejuvenation. These findings affirm

that yoga is not only feasible but also highly beneficial for elderly populations, offering protective effects against depression and contributing to sustained mental and physical well-being. (Chen et al., 2010; Chobe et al., 2020; Ganesh et al., 2022).

CONCLUSION

This case study provides evidence supporting the effectiveness of yoga as a non-pharmacological intervention for alleviating depressive symptoms among older adults. Following a structured four-day yoga program, both participants initially diagnosed with moderate depression demonstrated clinically meaningful reductions in Geriatric Depression Scale (GDS) scores, transitioning to a non-depressed state. The observed improvements are attributed to enhanced physical function, emotional stability, and the likely modulation of cortisol levels.These findings underscore the potential of yoga as a holistic and accessible therapy for elderly individuals experiencing depression. By integrating physical movement, breath regulation, and mindfulness, yoga not only promotes physiological resilience but also fosters psychological well-being and inner calm. As a safe and adaptable practice, yoga may serve as a valuable adjunct to conventional treatments for depression in geriatric populations. Further studies with larger samples and longer follow-up periods are warranted to validate and expand upon these initial results.

ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to the Surabaya City Government for providing educational and research facilities, which enabled the successful completion of this study within the scheduled timeframe.

CONFLICTS OF INTEREST

The authors declare no conflict of interest

REFERENCES

Avasthi, A., & Grover, S. (2018). Clinical practice guidelines for management of depression in elderly. *Indian journal of psychiatry*, *60*(Suppl 3), S341-S362.

Bonura, K. B., & Pargman, D. (2009). The effects of yoga versus exercise on stress, anxiety, and depression in older adults. *International Journal of Yoga Therapy*, *19*(1), 79-89.

Chen, K.-M., Chen, M.-H., Lin, M.-H., Fan, J.-T., Lin, H.-S., & Li, C.-H. (2010). Effects of yoga on sleep quality and depression in elders in assisted living facilities. *Journal of Nursing Research*, *18*(1), 53-61.

Chobe, S., Chobe, M., Metri, K., Patra, S. K., & Nagaratna, R. (2020). Impact of Yoga on cognition and mental health among elderly: A systematic review. *Complementary therapies in medicine*, *52*, 102421.

Fava, M. (2003). Diagnosis and definition of treatment-resistant depression. *Biological psychiatry*, *53*(8), 649-659.

Ganesh, H. S., Subramanya, P., Rao, M. R., Vadhiraj, H., & Udupa, V. (2022). Impact of yoga therapy in improving perceived stress, depression, and quality of life in elderly population: A randomized controlled trial. *Journal of Applied Consciousness Studies*, *10*(1), 62-68.

Hishikawa, N., Takahashi, Y., Fukui, Y., Tokuchi, R., Furusawa, J., Takemoto, M., Sato, K., Yamashita, T., Ohta, Y., & Abe, K. (2019). Yoga-plus exercise mix promotes cognitive, affective, and physical functions in elderly people. *Neurological research*, *41*(11), 1001-1007.

Lee, K. C., Tang, W. K., & Bressington, D. (2019). The experience of mindful yoga for older adults with depression. *Journal of psychiatric and mental health nursing*, *26*(3-4), 87-100.

Livana, P., Susanti, Y., Darwati, L. E., & Anggraeni, R. (2018). Gambaran tingkat depresi lansia. *NURSCOPE J. Keperawatan Dan Pemikir. Ilm*, *4*(4), 80-93.

Sackeim, H. A. (2001). The definition and meaning of treatment-resistant depression. *Journal of Clinical Psychiatry*, *62*, 10-17.

Setyarini, E. A., Niman, S., Parulian, T. S., & Hendarsyah, S. (2022). Prevalensi Masalah Emosional: Stres, Kecemasan dan Depresi pada Usia Lanjut. *Bulletin of Counseling and Psychotherapy*, *4*(1), 21-27.

Shahidi, M., Mojtahed, A., Modabbernia, A., Mojtahed, M., Shafiabady, A., Delavar, A., & Honari, H. (2011). Laughter yoga versus group exercise program in elderly depressed women: a randomized controlled trial. *International journal of geriatric psychiatry*, *26*(3), 322-327.