Jurnal Keterapian Fisik
Vol. 11, No. 1, May 2026
https://doi.org/10.37341/jkf.v11i1.506

Systematic Review

The Effect of Back Massage on Improving Sleep Quality in the Elderly: A Literature Review

Jasmine Kartiko[1*], Afif Ghufroni[1], Yulianto Wahyono[1]

[1] Department of Physiotherapy Poltekkes Kemenkes Surakarta, Indonesia

ABSTRACT

Background: *Sleep quality is essential for maintaining the overall health and well-being of older adults, as inadequate sleep can negatively affect physical, psychological, and functional conditions. Sleep disturbances are commonly reported among the older population and may reduce quality of life. Therefore, identifying safe and effective non-pharmacological interventions is important. This literature review aims to synthesize scientific evidence regarding the effectiveness of back massage in improving sleep quality among older adults.*

Methods: *This study employed a literature review method by identifying and analyzing relevant quantitative studies from electronic databases using keywords related to back massage and sleep quality in older adults. The inclusion criteria consisted of quasi-experimental studies published between 2020 and 2024 that examined the effectiveness of back massage interventions on sleep quality among older adults. Selected studies were reviewed based on predefined criteria to ensure relevance and methodological suitability.*

Results: *A synthesis of findings from 12 studies showed that back massage interventions consistently improved sleep quality among older adults. Statistical analyses, including the Wilcoxon Signed Rank Test and Paired Sample t-Test, predominantly demonstrated p-values < 0.05, indicating significant differences in sleep quality scores before and after the intervention.*

Conclusion: *Back massage therapy has been shown to positively improve sleep quality in older adults. Therefore, back massage therapy is recommended as a safe, effective, affordable, and easy-to-perform intervention to help enhance the quality of life of older adults.*

ARTICLE HISTORY
Received: March 15, 2026
Accepted: May 29, 2026

KEYWORDS
back massage; non-pharmacological therapy; older adults; physiotherapy; sleep quality

CONTACT
Jasmine Kartiko
✉
minemimin@yahoo.com
Department of Physiotherapy Poltekkes Kemenkes Surakarta, Indonesia
Campus II, Jl. Kapt. Adisumarmo, Tohudan, Colomadu, Karanganyar, Central Java 57173, Indonesia

Cite this as: Kartiko, J., Ghufroni, A., & Wahyono, Y. (2026). The Effect of Back Massage on Improving Sleep Quality in the Elderly: A Literature Review. *Jurnal Keterapian Fisik, 11(1)*, 82-100. https://doi.org/10.37341/jkf.v11i1.506

INTRODUCTION

Quality sleep is crucial for our overall health and well-being, especially for older adults. As we age, many factors can impact sleep, including natural bodily changes, chronic illnesses, medication side effects, and psychological issues like stress or anxiety (Wilk et al., 2022). Common sleep problems for older adults include difficulty falling

asleep (insomnia), frequent nighttime awakenings, restless sleep, or insufficient sleep. The effects of poor sleep are serious, including decreased memory and concentration, an increased risk of falls, a weakened immune system, worsening of existing health conditions, and a reduced overall quality of life (Ainun et al., 2020).

Lack of sleep-in older adults can increase susceptibility to various health problems. One significant risk is hypertension; various studies have shown that poor sleep quality in older adults directly impairs blood pressure, triggering hypertension explains that older adults often wake up more than four times a night, an indication of unmet sleep needs due to physical and psychological conditions (Akpınar et al., 2022; Jamilah, 2022; Ntoumas et al., 2025). Older adults who experience sleep disturbances also tend to suffer from reduced concentration, fatigue and a decline in daily activity levels (Nur Arista et al., 2026). Furthermore, poor sleep quality can affect the mental health of older adults, such as by increasing the risk of stress, anxiety and depression (Silva et al., 2026).

Globally, the prevalence of sleep disorders in the elderly population is quite high. Data from the National Sleep Foundation in 2014 revealed that 67% of 1.508 older adults aged 65 and over in the United States experienced sleep disorders, with 7.3% specifically complaining of difficulty initiating and maintaining sleep. Research shows that, out of 200 elderly respondents, 75% experienced moderate sleep disturbance, 13% severe sleep disturbance, and 0.5% very severe sleep disturbance. Factors such as age, gender, hypertension, diabetes, a history of smoking, and caffeine consumption were significantly associated with the severity of sleep disturbance in the elderly (Andas et al., 2024).

Furthermore, research by Rahman et al. (2024) reports that the prevalence of sleep disorders among older adults in Indonesia reaches 30.3%. Factors associated with sleep disorders include advanced age, being female, physical functional limitations, having more than one difficulty with instrumental activities of daily living (IADL), and high levels of physical activity. These findings highlight the importance of early screening and appropriate interventions to reduce sleep disorders in older adults and improve their quality of life.

Comprehensive therapy encompasses a variety of physical interventions that can improve sleep quality. One such intervention is back massage, which involves a series of hand-touch techniques such as stroking, petrissage, friction, and skin rolling (Akpınar et al., 2022; Wilk et al., 2022). The primary goal of back massage is to address insomnia symptoms and alleviate various health complaints that can be addressed through massage, without the need for pharmacological agents. Massage is the mechanical manipulation of the body based on an understanding of human anatomy and utilizing a variety of touch techniques. Back massage therapy is recognized as a safe, effective, and minimally invasive intervention, and can be administered by healthcare professionals or trained individuals (Packheiseir, 2024).

This literature review offers a novel approach by comprehensively examining the effectiveness of back massage as a non-pharmacological therapy for improving sleep quality in older adults. To date, research on sleep disorders in older adults has largely focused on the use of pharmacological therapies or other relaxation interventions, whilst studies specifically summarising research findings on back massage remain limited (Asriadi et al., 2026; Jamilah, 2022; Nur Arista et al., 2026). Furthermore, there are few literature reviews that integrate various findings regarding the benefits, effectiveness, and application of back massage in older adults, particularly within the context of healthcare services in Indonesia. Therefore, this literature review is expected to provide more comprehensive scientific evidence regarding back massage as a safe, simple, cost-

effective, and effective intervention for improving sleep quality in older adults. The aim of this study is to analyse and identify the effects of back massage on improving sleep quality in older adults based on the results of published research.

MATERIALS AND METHOD

Research Design

This study employed a literature review method, drawing on references from scientific journal articles. The aim of this literature review was to analyse and synthesise scientific evidence regarding the effect of back massage on improving sleep quality in older adults. Furthermore, this study was conducted to provide comprehensive evidence supporting back massage as a non-pharmacological intervention for enhancing sleep quality among older adults.

Eligibility Criteria

The inclusion criteria comprised quantitative studies investigating the effects of back massage interventions on sleep quality among older adults, defined as individuals aged 60 years and above. Eligible study designs included quasi-experimental and pre–post intervention studies that evaluated sleep quality outcomes before and after the intervention. Studies published between 2020 and 2024 and identified through electronic database searches using relevant keywords were included.

Exclusion criteria included review articles, qualitative studies, duplicate publications, studies involving participants below the defined older adult age range, and articles with incomplete data or outcomes unrelated to sleep quality. Studies that did not specifically examine back massage interventions, such as those focusing solely on foot massage or aromatherapy without incorporating back massage, were also excluded. In addition, studies that did not involve older adults as research participants, provided only narrative findings without clear quantitative data on sleep quality changes, did not meet the publication period criteria (2020–2024), or were not fully accessible were excluded from the analysis.

Information Sources and Search Strategies

This study employed a literature review method using journal articles as the primary sources of references. The journal search process was conducted through PubMed and Google Scholar using keywords related to the effectiveness of back massage and sleep quality in older adults. A total of 400 records were initially identified, consisting of 178 articles from PubMed and 222 articles from Google Scholar published between 2020 and 2024. The articles were then screened based on predefined inclusion and exclusion criteria through a structured selection process, resulting in 12 eligible studies for final analysis. The identification and selection procedures were systematically documented to ensure transparency and methodological rigor.

Study Selection Process

The study selection process was conducted systematically through several stages, namely the identification of articles, screening of titles and abstracts, assessment of full-text eligibility, and identification of articles meeting the inclusion and exclusion criteria. Following the screening process and the removal of duplicated or irrelevant articles, 12 articles were identified as eligible for further analysis. The article selection process was carried out independently by all authors to minimise research bias. In the event of

differing perceptions or disagreements regarding the eligibility of an article, a joint discussion was held until consensus was reached based on the pre-defined inclusion and exclusion criteria.

Data Analysis

Data analysis was conducted by reviewing, comparing, and synthesising the research findings from the selected articles. The analysis focused on respondent characteristics, intervention procedures, the duration of back massage therapy, sleep quality measurement instruments, and changes in sleep quality following the intervention. Furthermore, the findings from each study were analysed to identify similarities, differences, and overall trends regarding the effectiveness of back massage in improving sleep quality among older adults.

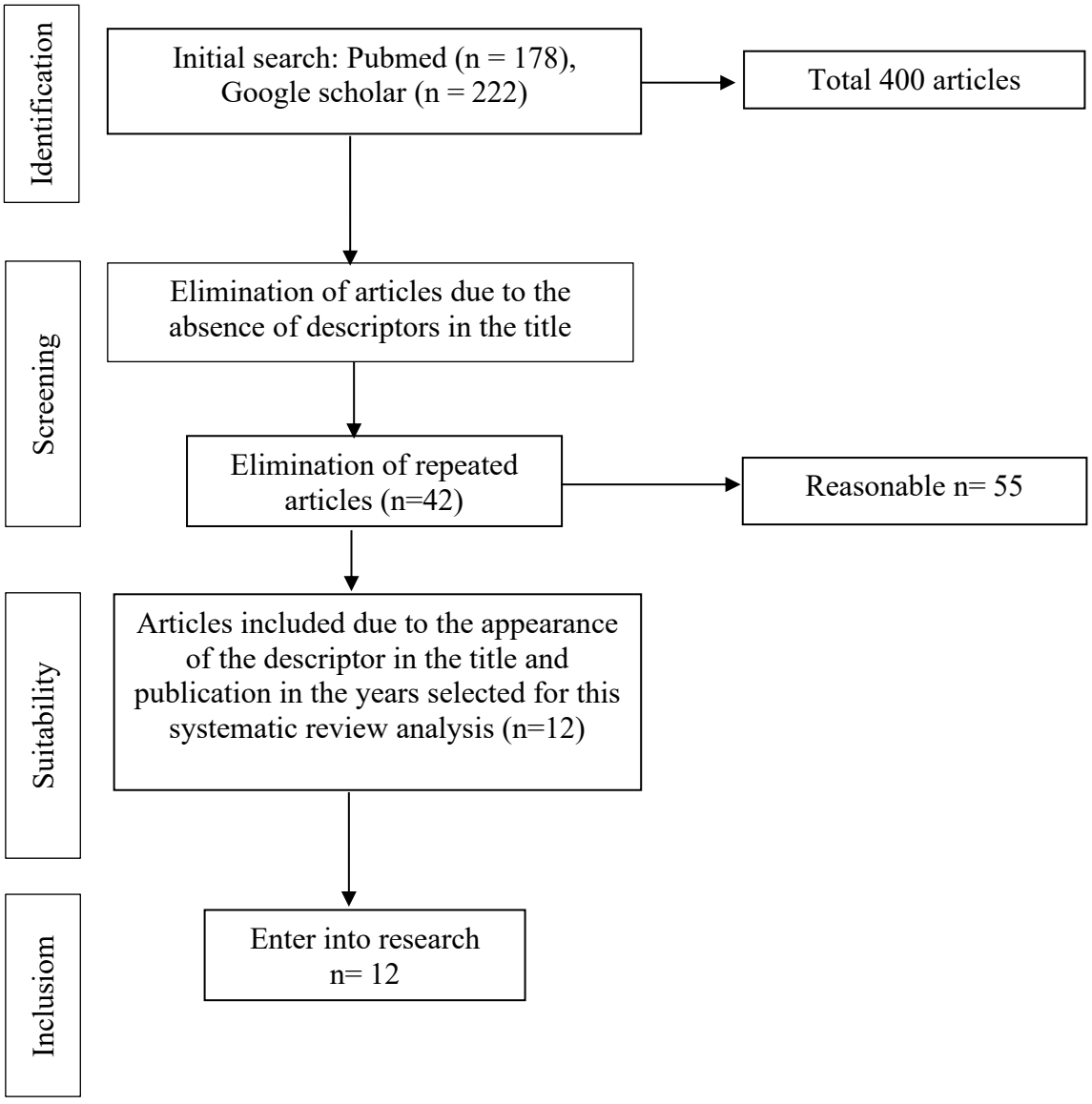


Figure1. Flowchart of The Systematic Observation Process of Selection Criteria

RESULTS

Table 1. The Result of Literature Review

No.	Researcher Name and Citation	Research Title	Population	Method	Results and types of statistical tests	Conclusion
1.	(Kojongian, 2024)	Care for the elderly with insomnia using massage therapy	2	Student Oral Case Analysis (SOCA) with case study design.	The application of massage therapy and warm water immersion to Mrs. T showed a significant change in sleep duration (from 5 to 9 hours). The application of warm water alone to Mrs. P showed a change, but not a significant one (from 6 to 7 hours and 30 minutes). The type of statistical test used in this case study was not explicitly stated. Results are presented by means of bandages and sleep duration before and after the intervention in both	After being implemented, insomnia in the elderly was resolved. Therapies such as foot massage and warm water soaks are considered highly effective in reducing insomnia in the elderly because they can relax and increase comfort levels.

No.	Researcher Name and Citation	Research Title	Population	Method	Results and types of statistical tests	Conclusion
					patients.	
2.	(Ibu & Sukabumi, 2023)	The Effect of Backrub Massage on Sleep Quality in Elderly Residents at the Rukun Nursing Home in Sukabumi, Capital City	18 (Overall, women, ages 60–90 year)	Quasi eksperimen with *one group pretest–Posttest design*	Before the intervention, 77.8% of the elderly had poor sleep quality; After the intervention, 72.2% had good sleep quality. The paired sample t-test showed a p-value of 0.008 (<0.05).	There is a significant effect of back massage therapy on improving sleep quality in the elderly at the Rukun Ibu Sukabumi Nursing Home.
3.	(Aldriana et al., 2024)	Reducing Insomnia in Menopausal Women by Performing Back Massage in Rambah Tengah Hilir Village, Rambah District	15	Quantitative descriptive	The average insomnia score before the intervention was 18.80, and after the intervention it was 5.67. This represents a decrease of 13.13 points, indicating a decrease in insomnia complaints and an improvement in sleep quality in menopausal women.	Back massage therapy effectively reduces insomnia in menopausal women and improves sleep quality. Families also become more aware of how to perform back massage as self-help at home.
4.	(Emilia et al., 2022)	Massage Therapy to	22	Comparative descriptive	Inferential tests (such as t-tests)	Massage therapy effectively improves sleep

No.	Researcher Name and Citation	Research Title	Population	Method	Results and types of statistical tests	Conclusion
		Improve Sleep Quality in Elderly Students Under the Care of the Palu Salvation Army College		analysis (pre-test and post-test)	were not mentioned, but comparisons were made based on changes in PSQI scores and sleep quality categories. Before therapy, all elderly individuals experienced sleep disturbances (0 = good, 2 = mild, 9 = moderate, 11 = poor). After therapy, 17 elderly individuals (77%) had good sleep quality, while 5 elderly individuals (23%) still had mild disturbances. There was a significant descriptive improvement in the elderly's sleep quality after	quality in the elderly, provides a relaxing effect, reduces physical complaints such as dizziness and aches, and improves fitness and quality of life. It is recommended that healthcare professionals continue to implement this complementary therapy in their care for the elderly .

No.	Researcher Name and Citation	Research Title	Population	Method	Results and types of statistical tests	Conclusion
					massage therapy	
5.	(Sangadji, 2022)	The Effectiveness of Back Massage on Sleep Quality at the Elderly Posyandu in Ngaran Hamlet, Bantul, Yogyakarta	21	Quasi-experimental design with one group pretest–posttest.	Wilcoxon Signed Rank Test. The mean sleep quality score before the intervention was 10.62, and after the intervention was 7.76. The Wilcoxon test results showed a p-value of 0.000 ($p<0.05$), indicating a significant difference between before and after the intervention.	Back massage effectively improves sleep quality in the elderly. It can be used as a self-help measure by caregivers and as a logical non-pharmacological method to address sleep disorders in the elderly.
6.	(Kurniawati et al., 2024)	The Effect of Back Massage on Elderly Patients with Sleep Disorders	2	This quantitative study used a case study and quasi-experimental approach using a single-group pretest–posttest design without a control group. Sleep quality was measured using the	No explicit inferential statistical tests were conducted (comparative descriptive analysis — pretest and posttest). Before the intervention: Mrs. M's PSQI score was 11 (poor sleep	Back massage effectively improves sleep quality in the elderly. After 3 days of intervention, both respondents showed a decrease in PSQI scores (<5), indicating improved sleep quality. This therapy can be applied as a non-pharmacological method in elderly care to address sleep disorders.

No.	Researcher Name and Citation	Research Title	Population	Method	Results and types of statistical tests	Conclusion
				Pittsburgh Sleep Quality Index (PSQI).	quality); Mrs. N's PSQI score was 8 (poor sleep quality). After the intervention, both had PSQI scores of 5 (good sleep quality). There was an improvement in sleep quality after three days of back massage.	
7.	(Lubbna et al., 2023)	*The Effectiveness of Slow-Stroke Back Massage on Sleep Improvement and Quality in the Elderly*	18	Experiment with a pretest-posttest control group design. Sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI).	Normality tests: Shapiro–Wilk, Levene's Homogeneity Test, Paired Sample t-Test, and Independent Sample t-Test. The average sleep quality score for the treatment group before and after was 10.11 ± 3.887 and 4.11 ± 1.054, with p = 0.001 (p <	Slow Motion Return Massage effectively improved sleep quality in older adults by 59% compared to the control group. because it is cheap, safe, and easy to do by family or elderly caregivers.

No.	Researcher Name and Citation	Research Title	Population	Method	Results and types of statistical tests	Conclusion
					0.05). The control group had p = 0.195 (not significant). The independent t-test showed p = 0.012 (p < 0.05), indicating a significant difference between the treatment and control groups.	
8.	(Tumanggor et al., 2021)	The Effectiveness of Foot Massage and Lavender Aromatherapy in Reducing Insomnia in the Elderly	48	A quasi-experimental pretest–posttest with two intervention groups. The sampling technique used purposive sampling. Insomnia was measured using the KSPBJ-IRS (Insomnia Rating Scale).	Dependent t-test and independent t-test. Mean insomnia scores for the foot massage group: before 20.5 ± 2.81, after 18.0± 2.95; lavender aromatherapy group: before 21.4 ± 3.30, after 16.2 ± 3.73. The test results showed p = 0.060 (p > 0.05) This means there	Foot massage and lavender aromatherapy were both effective in reducing insomnia in the elderly, although they did not show statistically significant differences. These therapies are recommended as alternatives. non-pharmacologic to improve the sleep quality of elderly in nursing homes.

No.	Researcher Name and Citation	Research Title	Population	Method	Results and types of statistical tests	Conclusion
					was no significant difference between the two therapies, but both reduced insomnia scores clinically.	
9.	(Maryaningsih et al., 2020)	The Effect of Back Therapy on Improving Sleep Quality in the Elderly	46 elderly people out of a total population of 88 people (using purposive sampling technique)	The pre-experimental design used a one-group pretest–posttest design without a control group. Sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI).	Wilcoxon Signed Rank Test. Before therapy, 65.2% of elderly people had very poor sleep quality; after therapy, 54.3% had good sleep quality and 32.7% had very good sleep quality. The Wilcoxon test results showed a Z value of -3.522 and $p = 0.002$ ($p < 0.05$), indicating a significant difference between before and after the intervention.	There was a significant effect of back massage therapy on improving sleep quality for the elderly at the Taman Bodhi Asri Binjai Home. This therapy effectively improves sleep quality without the use of medication and can be implemented as a logical non-pharmacological intervention for the elderly.
10.	(Amalia et al., 2025)	The Effect of Back	10	Pre-experiment with a one-	Paired Samples t-test.	Back acupressure therapy significantly improves

No.	Researcher Name and Citation	Research Title	Population	Method	Results and types of statistical tests	Conclusion
		Acupressure Therapy on Blood Pressure and Sleep Quality in Elderly Patients with Hypertension in the PSTW		group pretest–posttest design. Pittsburgh Sleep Quality Index (PSQI)	Mean blood pressure decreased from 144.00 mmHg to 139.00 mmHg with p = 0.237 (not significant). Sleep quality improved significantly, with PSQI scores decreasing from 7.10 to 5.00 with p = 0.001 (p < 0.05).	sleep quality but not significantly reduces blood pressure in elderly people with hypertension. This therapy can be used as a non-pharmacological intervention to improve sleep quality for elderly people in social care facilities.
11.	(Ainun et al., 2020)	The Effect of Back Massage Therapy on Sleep Improvement and Quality in Elderly Residents at the Guna Budi Bakti Foundation Nursing Home Medan	20	Quasi-experimental design with a pretest-posttest group design. KSPBJ Questionnaire (Insomnia Assessment Scale)	Wilcoxon Signed Rank Test. Mean sleep quality improved significantly after therapy; the test results showed a p-value of 0.000 (p < 0.05) and Z = -3.921, indicating a significant improvement in sleep quality after back massage therapy.	Back massage therapy significantly improved sleep quality for the elderly at the Guna Budi Bakti Foundation Nursing Home in Medan. This therapy can be used as a logical non-pharmacological intervention by nurses to address sleep disorders in the elderly.

No.	Researcher Name and Citation	Research Title	Population	Method	Results and types of statistical tests	Conclusion
12.	(Hilir, 2024)	Effect of Back Massage on Insomnia Scale Changes at the Waipare Social Welfare and Elderly Care Center	28	Quasi-experiment with one group pretest-posttest design (without control group).	Wilcoxon Signed Rank Test. Before therapy, the majority of elderly people experienced moderate insomnia (82.1%) and severe insomnia (17.9%). After therapy, there was a decrease The results of the Wilcoxon test showed a p-value of 0.000 (<0.05) and a calculated Z-value of -4.899 > Z-table (1.96). There was a significant effect of back massage therapy on reducing insomnia	Based on the evidence, back massage therapy demonstrates a significant clinical effect on reducing insomnia scores in the elderly. Therefore, it is highly recommended as a safe, cost-effective, and non-pharmacological intervention to optimize sleep quality for older adults, particularly within social care facilities and geriatric care settings.

DISCUSSION

The synthesis of twelve peer-reviewed journals demonstrates a highly consistent and positive trajectory regarding the efficacy of back massage interventions in optimizing sleep quality among older adults. However, a critical evaluation reveals that while the clinical outcomes are overwhelmingly favorable, the methodological pathways, intervention protocols, and underlying mechanisms exhibit nuances that warrant deeper interpretation. The predominant finding across the analyzed literature such as the significant post-intervention reductions in the Pittsburgh Sleep Quality Index (PSQI) scores reported by Amalia et al. (2025) and Maryaningsih et al. (2021) can be scientifically interpreted through neurophysiological and biomechanical lenses. Back massage utilizing a combination of touch techniques, including stroking, petrissage, friction, and skin rolling, operates as a mechanical manipulation that directly stimulates cutaneous and subcutaneous mechanoreceptors.

From a physiological standpoint, this continuous tactile stimulation down-regulates the activity of the sympathetic nervous system (SNS) while simultaneously activating the parasympathetic nervous system (PNS). This shift effectively lowers heart rate, reduces blood pressure, and decreases systemic cortisol—the primary stress hormone. Furthermore, the mechanical pressure applied during a back massage promotes local blood circulation and myofascial release, which alleviates localized musculoskeletal pain or tension —common contributors to nocturnal awakenings in geriatric populations. This state of physical relaxation facilitates the natural synthesis of serotonin, a precursor to melatonin, thereby addressing the core symptoms of insomnia and accelerating sleep initiation (Amalia et al., 2025).

A critical comparison between the included studies reveals significant variations in the specific protocols used, which deeply influences the interpretation of their overall effectiveness. While traditional back massage consistently yields positive outcomes, variations like slow-stroke back massage and back acupressure offer distinct clinical advantages. Evaluated by Lubbna et al. (2023), the slow-stroke back massage technique demonstrated a profound 59% improvement in sleep quality compared to a control group.

The deliberate, slow rhythm of this approach optimizes sensory adaptation and is particularly effective for highly fragile older adults, such as post-stroke patients, because it provides maximum sedation with minimal mechanical stress. On the other hand, the back acupressure technique investigated by Amalia et al. (2025) targets specific meridians or neuromuscular trigger points. Interestingly, while it significantly enhanced sleep quality with a p-value of 0.001, it failed to produce a statistically significant reduction in systemic blood pressure ($p = 0.237$).

This dissociation indicates that while targeted pressure is powerful enough to induce localized muscle relaxation and mental somnolence, it may require a longer or more frequent application protocol to drive systemic autonomic adjustments in hypertensive geriatric patients. Meanwhile, studies that integrated back massage with other modalities, such as warm water immersion or foot massage e.g., Kojongian (2024); Tumanggor et al. (2021)), present a unique analytical challenge. Clinically, combining therapies creates a synergistic effect that attacks insomnia from multiple sensory angles, both thermal and tactile. However, methodologically, these studies lack the isolation required to determine whether the back massage itself was the primary driver of recovery or merely a complementary catalyst.

Despite the statistically robust p-values ($p < 0.05$) reported in ten out of eleven inferential studies, the structural strength of the evidence base must be viewed critically.

The widespread reliance on quasi-experimental, single-group pretest-posttest designs e.g., Ibu & Sukabumi (2023); Sangadji (2022) introduces a substantial risk of internal invalidity. Without a true control group, it is mathematically challenging to fully separate the therapeutic effects of the back massage from the Hawthorne effect (participants improving simply because they are receiving attention) or the natural fluctuation of sleep patterns over time.

This methodological vulnerability is further compounded by the small sample sizes seen in several studies, such as the case analyses by Kojongian (2024) and Kurniawati et al. (2024), which evaluated only two respondents each. While these small-scale studies provide excellent, descriptive, real-world clinical insight, they completely lack the statistical power required to generalize the findings to the broader, highly diverse geriatric population. Lastly, the universal reliance on self-reported questionnaires like the PSQI and the Insomnia Rating Scale (IRS) introduces an element of subjectivity. Older adults with mild cognitive decline or memory gaps may struggle with recall bias, potentially skewing the data.

From a broader clinical perspective, these limitations do not diminish the practical value of back massage, as the intervention remains an exceptionally safe, non-invasive, low-cost, and highly accessible non-pharmacological therapy. In geriatric and community-based healthcare settings, where polypharmacy is a critical hazard, integrating back massage as a standard evening routine offers an evidence-backed alternative to sedative-hypnotic drugs. It bridges the gap between active rehabilitation and holistic well-being, paving the way for sustainable, family-led long-term care.

In addition to evaluating the primary data, this study acknowledges inherent review limitations that shape the scope of its conclusions. This review was strictly restricted to literature indexed within the PubMed and Google Scholar databases. Consequently, relevant peer-reviewed studies archived in other major databases, such as Scopus, Cochrane Library, or Embase, may have been omitted. A language and publication bias may also exist, as the search criteria were strictly limited to articles published in English and Indonesian. Additionally, there is an inherent risk of publication bias, as journals predominantly favor publishing positive, statistically significant results over negative or neutral outcomes. Finally, the strict timeframe restriction to articles published exclusively between 2020 and 2024 prevents the inclusion of older, foundational, or longitudinal insights regarding geriatric massage interventions.

This literature review acknowledges several limitations related to both the primary studies included and the review process itself. Regarding the limitations of the included studies, the majority of the reviewed literature relied on quasi-experimental or pre-experimental one-group pretest-post test designs without a control group. The absence of control groups severely limits the ability to account for confounding variables, placebo effects, or natural history changes, thereby weakening the strength of causal inferences regarding the direct impact of back massage on sleep quality.

Furthermore, many studies operated with relatively small sample sizes, ranging from case reports with only 2 participants to small cohorts of 10 to 22 individuals. These small samples reduce statistical power and restrict the generalizability of the findings to the broader elderly population. There was also a notable heterogeneity in the interventions analyzed, which spanned from slow-stroke back massage and back acupressure to combinations with foot massage or warm water immersion, complicating the determination of a standardized protocol regarding duration and frequency. Lastly, the primary studies heavily relied on subjective self-reported questionnaires, such as the

Pittsburgh Sleep Quality Index (PSQI) or the Insomnia Rating Scale (IRS), which are inherently susceptible to recall bias compared to objective measures like polysomnography.

In terms of review limitations, this study was restricted to literature indexed within the PubMed and Google Scholar databases. Consequently, relevant peer-reviewed studies archived in other major databases, such as Scopus, Cochrane Library, or Embase, may have been omitted. A language and publication bias may also exist, as the search criteria were strictly limited to articles published in English and Indonesian. Additionally, there is an inherent risk of publication bias, as journals predominantly favor publishing positive, statistically significant results over negative or neutral outcomes. Finally, the strict timeframe restriction to articles published exclusively between 2020 and 2024 prevents the inclusion of older, foundational, or longitudinal insights regarding geriatric massage interventions.

CONCLUSION

This systematic literature review aims to synthesize scientific evidence regarding the effectiveness of back massage on improving sleep quality in the elderly. Based on an analysis of 12 relevant scientific journals (published between 2020 and 2024), it can be concluded that back massage interventions have a significant and consistent effect on improving sleep quality in the elderly. These results are supported by strong statistical evidence, with the majority of studies (10 of the 11 studies focusing on back massage) reporting a p-value <0.05 from inferential tests such as the Wilcoxon Signed Rank Test or Paired Sample T-Test. This improvement in sleep quality is due to the massage's mechanism of physical and mental relaxation, thereby addressing insomnia symptoms. Therefore, back massage therapy is highly recommended as a safe, effective, inexpensive, and easy-to-perform non-pharmacological intervention for nurses to improve the quality of life in the elderly.

ACKNOWLEDGEMENT

The author would like to thank the Surakarta Public Health Polytechnic (Poltekkes Kemenkes Surakarta) for its support and the facilities provided, which enabled this research to be carried out successfully.

DECLARATION OF USE OF AI IN SCIENTIFIC WRITING

AI tools were used solely for grammar and language editing. The authors take full responsibility for the content and integrity of the manuscript.

CONFLICT OF INTERESTS

The authors declare that no conflicts of interest existed that may have influenced the findings or interpretation of this study.

REFERENCES

Ainun, H., Ndruru, G. B., & Baeha, K. Y. (2020). Pengaruh terapi massage punggung terhadap di Panti Jompo Yayasan Guna Budi Bakti Medan tahun 2020. *Jurnal Ilmiah Keperawatan IMELDA*, *6*(2), 93–98. https://doi.org/10.52943/jikeperawatan.v6i2.388

Akpınar, R. B., Akın, G., & Ay, E. (2022). The effect of back massage on sleep quality: A systematic review. *Kafkas Journal of Medical Sciences*, *12*(2), 179–184. https://doi.org/10.5505/kjms.2022.25932

Aldriana, N., Nina Surya Fitri Yanti, & Rahmawati. (2024). Mengurangi insomnia pada wanita menopause dengan melakukan pijat punggung (back massage) di Desa Rambah Tengah Hilir Kecamatan Rambah. *Mejuajua: Jurnal Pengabdian Pada Masyarakat*, *4*(2), 301–307. https://doi.org/10.52622/mejuajuajabdimas.v4i2.143

Amalia, R. F., Bachri, Y., & Putri, M. (2025). Pengaruh terapi totok punggung terhadap tekanan darah dan kualitas tidur lansia penderita hipertensi di PSTW Kasih Sayang Ibu Batusangkar. *Menara Ilmu*, *19*(1), 665–668. https://doi.org/10.31869/mi.v19i1.6838

Andas, A., Wada, F. H., Puspitasari, I., Shoaliha, M., Purnamasari, A., & Andas, N. H. (2024). Prevalence and factor associated of sleep disturbance community-dwelling older adults in Indonesia. *Research Square*, *3*(March), 1–17. https://doi.org/10.21203/rs.3.rs-4021008/v1

Asriadi, A., Nursalam, N., & Fadli, F. (2026). Effects of progressive muscle relaxation and slow stroke back massage on blood pressure, stress, and sleep quality in older adults: A scoping review. *SAGE Open Nursing*, *12*, 1–10. https://doi.org/10.1177/23779608261423020

Emilia, N. L., Anggreyni, M., Beba, N. N., Sarman, J. N. R., S, S., & Matongka, Y. H. (2022). Terapi Pijat untuk Meningkatkan Kualitas Tidur pada Lansia Binaan Stikes Bala Keselamatan Palu. *Idea Pengabdian Masyarakat*, *2*(05), 253–257. https://doi.org/10.53690/ipm.v2i05.168

Hilir, T. (2024). *Al-Insyirah Midwifery Jurnal Ilmu Kebidanan (Journal of Midwifery Sciences)*. *13*, 84–90.

Ibu, R., & Sukabumi, K. (2023). *Journal Of Public Health Innovation (JPHI)*. *04*(1), 167–175. https://doi.org/10.34305/jphi.v4i01.828

Jamilah, J. (2022). Sleep quality of hypertensive patients can be influenced by the effectiveness of back massage. *Journal of Complementary Nursing*, *1*(3), 106–113. https://doi.org/10.53801/jcn.v1i3.53

Kojongian, G. I. M. (2024). Asuhan keperawatan pada lansia dengan insomnia menggunakan terapi penerapan massase [Analisa jurnal]. Akademi Keperawatan Rumkit Tk. III Manado.

Kurniawati, D., Widiarti, A. W., & Surakarta, P. K. (2024). *Pengaruh Massage Punggung Terhadap Insomnia Pada Lansia Effect of Back Massage on Insomnia In The Elderly*. *8*(1), 111–116. https://doi.org/10.33660/jfrwhs.v8i1.351

Lubbna, S., Dani, A. H., & Asih, S. W. (2023). The effects of slow-stroke back massage on anxiety and sleep problems in elderly stroke patients. *Malahayati International Journal of Nursing and Health Science*, *06*(1), 53–59. https://doi.org/10.33024/minh.v6i1.8874

Maryaningsih, Agustina, D., Vera, Y., & Sulaiman. (2020). Efektivitas pemberian massage punggung terhadap kualitas tidur lanjut usia di Panti Taman Bodhi Asri. *Gorontalo Journal of Public Health*, *3*(2), 101–108. https://doi.org/10.32662/gjph.v3i2.1161

Maryaningsih, Sulaiman, Anggriani, Wijanarko, W., & Fajrillah. (2021). Pengaruh massage punggung terhadap peningkatan kualitas tidur lanjut usia. *Jurnal Kesehatan Dan Masyarakat (Jurnal KeFis)*, *1*(1), 2–7.

Ntoumas, I., Karatzaferi, C., Boubougiatzi, F., Manakou, N., Aslanidi, A., Giannaki, C. D., Papanikolaou, F., Dardiotis, E., Lavdas, E., & Sakkas, G. K. (2025). Massage positively influences daytime brain activity and reduces arousal state in poor sleepers: A randomized controlled trial. *BMC Complementary Medicine and Therapies*, *25*(1), 1–11. https://doi.org/10.1186/s12906-025-05022-6

Nur Arista, A., Adji Norontoko, D., & Novitasari, A. (2026). Enhancing sleep quality in hypertensive patients: A case study of slow stroke back massage within family nursing care. *International Journal of Nursing and Health Services (IJNHS)*, *9*(1), 1–7. https://doi.org/10.35654/ijnhs.v9i1.892

Packheiseir. (2024). *A systematic review and multivariate meta-analysis of the physical and mental health benefits of touch interventions*. *8*(June). https://doi.org/10.1038/s41562-024-01841-8

Rahman, F. F., Lin, K. Y., & Lin, K. H. (2024). Sleep disturbance and associated factors in older adults using data from the Indonesian family life survey. *International Journal of Gerontology*, *18*(3), 184–190. https://doi.org/10.6890/IJGE.202407_18(3).0009

Sangadji, F. (2022). Efektifitas massage punggung terhadap kualitas tidur di posyandu lansia Dusun Ngaran Bantul Yogyakarta The effectiveness of back massage on sleep quality of the elderly in Posyandu, Ngaran Bantul, Yogyakarta. *Jurnal Kesehatan Madani Medika*, *13*(01), 120–127.

Silva, L. C. de M. A., Dutra, S. V. O., Ferreira, B. F., Rojas, Y. L. G., dos Santos, K. V. G., de Silva, C. J. A., Silva, H. M. M. D., Ribeiro, K. R. B., Dantas, D. V., & Dantas, R. A. N. (2026). Mental health promotion through nursing interventions focused on anxiety, sleep and well-Being: A scoping review. *International Journal of Mental Health Nursing*, *35*(2), 1–19. https://doi.org/10.1111/inm.70254

Tumanggor, C. S. M. Y., Sari, R. Y., & Djamaludin, D. (2021). Efektivitas pijat kaki dan aromaterapi lavender mengurangi gangguan insomnia pada lansia. *Holistik Jurnal Kesehatan*, *15*(3), 483–489. https://doi.org/10.33024/hjk.v15i3.4152

Wilk, I., Kowalczyk, K., Nowak, B., Andrzejewski, W., & Kassolik, K. (2022). Effectiveness of massage therapy in reducing back pain in older adults. *Medical Science Pulse*, *16*(1), 1–12. https://doi.org/10.5604/01.3001.0015.8755