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OPEN PEER REVIEW

The Effect of Slow Stroke Back Massage on Sleep Quality in Hemodialysis Patients: A Clinical Trial Study

Mohammad Zayer, Masumeh Akbarbegloo, Fatemeh Mehraji

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7 Jul 2024	22 Nov 2025	24 Jan 2025	10.5812/chbs-158700

About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

More about open peer review: brieflands.com/knowledgebase/opr

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1 Original submission

2 comments · 11 Jan 2025 – 24 Jan 2025

Referee 1 Reviewer

MINOR REVISION 11 Jan 2025

The sleep quality of the control group has been deteriorating, even though no intervention has been administered to them. State the reason for this deterioration over 15 days and one month.
Explain the composition of the control and intervention groups in terms of gender and age. Were the groups different or not?
For better understanding, you could express some data in a graph, such as the difference in sleep quality before and after the intervention.

Referee 2 Reviewer

MINOR REVISION 24 Jan 2025

- Subject
- 1) Is the article within the scope of the journal? YES
- 2) Does the article have novelty? NO
- Title
- 3) Does the title reflect the content appropriately? YES
- 4) Is there any abbreviation in the title? NO
- Abstract
- 5) Is there a structured Abstract? YES
- 6) Are Keywords (3-10) selected from MESH? YES
- Introduction
- 7) Clarity of the objectives/hypotheses? (Are the objectives clearly stated?) YES
- 8) Does the Introduction include: “What we know,” “What we don’t know” and “Aims”? YES
- Materials and Methods
- 9) Clearly describe the selection of participants (patients or laboratory animals, including controls)? yes
- 10) Study Design Described Sufficiently? yes
- 11) Adequacy of the sample studied? yes
- 12) Subjects Representative of the Target Population? yes
- 13) Provided a sample size calculation or justification? yes
- 14) Control Subjects Appropriate? yes
- 15) Power of the study declared? yes
- 16) Reported actual P values for primary analyses? yes
- 17) Blinding of Investigators (if applicable)? -
- 18) Blinding of subjects (if applicable)? yes
- 19) Identify the methods and apparatus (give the manufacturer’s name and address in parentheses)? -
- 20) Identify procedures in sufficient detail to allow other workers to reproduce the results? -
- 21) Identify precisely all drugs and chemicals used, including generic name(s), dose(s), and route(s) of administration? -
- 22) Inclusion/Exclusion Criteria Explained? -
- 23) Appropriate Statistical Analysis? -
- Results
- 24) Appropriateness, clarity, and adequacy of the Tables and Figures? yes
- 25) Present results in a logical sequence in the text, tables, and illustrations, giving the main or most

important findings? The demographic characteristics of the two intervention and control groups should be stated separately.

- 26) Duplicate data in graphs and tables? no
- 27) Use technical terms as non-technical in statistics, such as “random” (which implies a randomizing device), “normal,” “significant,” “correlations,” and “sample.”? yes
- Discussion
- 28) Conclusion justified & substantiated? The discussion should be written more strongly.
- 29) Analysis supports Conclusion? yes
- References
- 30) Proper Writing of the References? yes
- 31) References for the last five years? Almost

2

Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Response to comments

1. Control of Word Counts: Your manuscript contains word counts more than the maximum count of the journal standards. The maximum allowed word count for your article is: 3500.

Response: We reduced the word count of the manuscript to less than 3,500.

2 Revision 1

3 comments · 18 May 2025 – 25 May 2025

Referee 3 Reviewer

MAJOR REVISION 18 May 2025

Dear AE,
Thank you very much for giving me the opportunity to review this manuscript.
This revised manuscript evaluates the efficacy of slow stroke back massage (SSBM) on sleep quality in hemodialysis patients using a randomized controlled trial design. The study addresses a clinically relevant issue—sleep disturbances in this population—and proposes a non-pharmacological intervention. Strengths include rigorous methodology (randomization, PSQI assessment, repeated measures) and alignment with existing literature. However, several issues require clarification, particularly regarding statistical reporting, methodological transparency, and contextualization of results.

@ Abstract & Introduction
1. Abstract: The results state a mean sleep quality score of *10.5 ± 19.39* (intervention) vs. *12.6 ± 55.2* (control) on day 30. The SDs are implausibly high (e.g., ±55.2 for a PSQI scale of 0–21). Clarify or correct these values.
2. Background: The rationale for SSBM timing (3–7 PM) is underexplained. Prior studies suggest nighttime massages are more effective for sleep. Justify this deviation (e.g., logistical constraints, hemodialysis-specific factors).

@ Methods
3. Sample Size Calculation: The formula is appropriately cited, but the attrition rate (10%) seems arbitrary. Provide a reference or rationale.
4. Randomization: The card-shuffling method is unconventional for RCTs. Specify whether allocation concealment was maintained (e.g., sealed envelopes).
5. Blinding: Patients were blinded, but was the outcome assessor blinded? This is critical for PSQI's subjective measures.
6. Intervention Protocol: The physiotherapist's supervision is noted, but inter-rater reliability for massage technique standardization is missing.

@ Results
# Statistical Reporting:
7. Table 3's F-values lack degrees of freedom (e.g., *F=7.1, P<0.001* should include df).
8. The PSQI subscale analysis (Table 2) reports P-values without effect sizes (e.g., Cohen's *d*). Include these to quantify clinical significance.
9. Data Anomalies: The control group's sleep quality worsened on day 15 (*13.1 ± 6.15* vs. baseline *11.89 ± 6.32*). Discuss potential confounding factors (e.g., dialysis schedule, stress).

@ Discussion
10. Contradictory Literature: The manuscript contrasts with studies showing no SSBM benefit (e.g., Harris et al., Williamson et al.). Address this discrepancy explicitly—e.g., population differences (hemodialysis vs. postmenopausal women) or intervention fidelity.
11. Limitations: The subjective nature of PSQI is acknowledged, but consider adding actigraphy or caregiver reports to strengthen findings.

@ Ethical & Revisions
12. Author Responses: The word count reduction is confirmed, but other reviewer queries (e.g., statistical corrections) are not addressed.

@ Recommendations & Questions
# Statistical Corrections:
13. Clarify the implausible SDs in the abstract (e.g., ±19.39 and ±55.2).
14. Report effect sizes for PSQI subscales (Table 2) and include df for F-statistics (Table 3).

@ Methodological Transparency:
15. Detail allocation concealment (e.g., sealed envelopes) and assessor blinding.
16. Justify the 3–7 PM massage timing with references or pilot data.

@ Intervention Fidelity:
17. Describe steps to ensure consistent massage pressure/duration across sessions.

@ Limitations:
18. Discuss how uncontrolled variables (e.g., dialysis timing) may bias results.

19. Correct typographical errors (e.g., "rutin care" → "routine care," line 10).
20. Standardize abbreviations (e.g., "SSBM" is defined late in the text).

Overall, the study's premise is valuable, but statistical anomalies and methodological gaps must be resolved. Address the above points and ensure consistency in reporting before reconsideration.

Final Decision: Major Revision

Kind Regards | Publisher Supervisor

Associate Editor

MAJOR REVISION 24 May 2025

Dear Authors,

Thank you for submitting your revised manuscript, "The Effect of Slow Stroke Back Massage on Sleep Quality in Hemodialysis Patients: A Clinical Trial Study", to Comprehensive Health and Biomedical Studies. After careful consideration by the reviewers, I invite you to revise and resubmit your work to address significant concerns.

The reviewers identified several issues requiring attention. While the topic is of interest, these revisions are essential to ensure the manuscript meets the journal's standards.

Address all reviewer comments thoroughly in a point-by-point response, provide detailed explanations for any disagreements with reviewer suggestions, highlight changes in the revised manuscript, and resubmit your revised manuscript for further evaluation.

Please note that this decision does not guarantee acceptance, as the revised manuscript will undergo another round of review. We encourage you to carefully consider the reviewers' feedback to strengthen your work.

Final Decision: Major Revision

Kind Regards | Publisher Supervisor

Editor-in-Chief

MINOR REVISION 25 May 2025

Public Comment:
Dear AE,
Thank you very much for giving me the opportunity to review this manuscript.
This revised manuscript evaluates the efficacy of slow stroke back massage (SSBM) on sleep quality in

hemodialysis patients using a randomized controlled trial design. The study addresses a clinically relevant issue—sleep disturbances in this population—and proposes a non-pharmacological intervention. Strengths include rigorous methodology (randomization, PSQI assessment, repeated measures) and alignment with existing literature. However, several issues require clarification, particularly regarding statistical reporting, methodological transparency, and contextualization of results.

@ Abstract & Introduction

1. Abstract: The results state a mean sleep quality score of *10.5 ± 19.39* (intervention) vs. *12.6 ± 55.2* (control) on day 30. The SDs are implausibly high (e.g., ±55.2 for a PSQI scale of 0–21). Clarify or correct these values.

2. Background: The rationale for SSBM timing (3–7 PM) is underexplained. Prior studies suggest nighttime massages are more effective for sleep. Justify this deviation (e.g., logistical constraints, hemodialysis-specific factors).

@ Methods

3. Sample Size Calculation: The formula is appropriately cited, but the attrition rate (10%) seems arbitrary. Provide a reference or rationale.

4. Randomization: The card-shuffling method is unconventional for RCTs. Specify whether allocation concealment was maintained (e.g., sealed envelopes).

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@ Discussion

10. Contradictory Literature: The manuscript contrasts with studies showing no SSBM benefit (e.g., Harris et al., Williamson et al.). Address this discrepancy explicitly—e.g., population differences (hemodialysis vs. postmenopausal women) or intervention fidelity.

11. Limitations: The subjective nature of PSQI is acknowledged, but consider adding actigraphy or caregiver reports to strengthen findings.

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12. Author Responses: The word count reduction is confirmed, but other reviewer queries (e.g., statistical corrections) are not addressed.

@ Recommendations & Questions

Statistical Corrections:

13. Clarify the implausible SDs in the abstract (e.g., ±19.39 and ±55.2).

14. Report effect sizes for PSQI subscales (Table 2) and include df for F-statistics (Table 3).

@ Methodological Transparency:

15. Detail allocation concealment (e.g., sealed envelopes) and assessor blinding.

16. Justify the 3–7 PM massage timing with references or pilot data.

@ Intervention Fidelity:

17. Describe steps to ensure consistent massage pressure/duration across sessions.

@ Limitations:

18. Discuss how uncontrolled variables (e.g., dialysis timing) may bias results.
19. Correct typographical errors (e.g., "rutin care" → "routine care," line 10).
20. Standardize abbreviations (e.g., "SSBM" is defined late in the text).
Overall, the study's premise is valuable, but statistical anomalies and methodological gaps must be resolved.
Address the above points and ensure consistency in reporting before reconsideration.
Final Decision: Major Revision
Kind Regards | Publisher Supervisor

Decision:
Major revision

3

Revision 2

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Dear Editor
Thank you for your valuable suggestions. All changes are shown in the manuscript in red font and yellow highlight.
Best regards
M.A
Corresponding author

Reviewer 1:

@ Abstract & Introduction

1. Abstract: The results state a mean sleep quality score of *10.5 ± 19.39* (intervention) vs. *12.6 ± 55.2* (control) on day 30. The SDs are implausibly high (e.g., ±55.2 for a PSQI scale of 0–21). Clarify or correct these values.

Response: These values were corrected in the manuscript and are highlighted in yellow.

“On the 30th day, the mean sleep quality score was 10.19±5.39 in the intervention group compared to 12.55±6.2 in the control group.”

2. Background: The rationale for SSBM timing (3–7 PM) is underexplained. Prior studies suggest nighttime massages are more effective for sleep. Justify this deviation (e.g., logistical constraints, hemodialysis-specific factors).

Response: The time of back massage in various studies is mostly mentioned during the night and before the patient sleeps. Based on suggestions from other studies, it is thought that there is a need for studies that evaluate the effect of massage earlier (Akpinar). In this study, the back massage was performed at 3 PM to examine the effect of massage at times other than the patient's circadian rhythm of sleep.
Reference: Akpinar RB, Akin G, Ay E. The Effect of Back Massage on Sleep Quality: A Systematic Review. *Kafkas J Med Sci*. 2022; 12(2):179–184. https://doi.org/10.5505/kjms.2022.25932.

@ Methods

3. Sample Size Calculation: The formula is appropriately cited, but the attrition rate (10%) seems arbitrary. Provide a reference or rationale.

Response: In the study by Raiesifar et al. (2021), the sample size was calculated by including a 10% attrition rate.

Raiesifar Z, Molavynejad Sh, Raiesifar A, Maraghi E, Vaismoradi M, Helalat A. The effect of slow-stroke back massage on fatigue and sleep quality in hemodialysis patients: A clinical trial study. Hayat, Journal of School of Nursing and Midwifery, Tehran University of Medical Sciences. 2021; 27(1): 59-71. URL: http://hayat.tums.ac.ir/article-1-3978-en.html.

4. Randomization: The card-shuffling method is unconventional for RCTs. Specify whether allocation concealment was maintained (e.g., sealed envelopes).

Response: Allocation concealment mentioned in the manuscript and are highlighted in yellow.

“Using a simple randomization method, each of the selected patients was randomly assigned a number and their name was written on the envelopes and given to someone who was unaware of the study objectives. Then, all the sealed envelopes were placed in a container and, based on chance, the first 30 numbers taken out of the container were assigned to the intervention group and the second 30 numbers were assigned to the control group.”

5. Blinding: Patients were blinded, but was the outcome assessor blinded? This is critical for PSQI’s subjective measures.

Response: Neither the researcher nor the participant knew who was in which group. It was mentioned in the manuscript and are highlighted in yellow.

6. Intervention Protocol: The physiotherapist’s supervision is noted, but inter-rater reliability for massage technique standardization is missing.

Response: In this study, the physiotherapist only observed and confirmed the correct way to perform the massage, so there was no inter-rater reliability.

@ Results

Statistical Reporting:

7. Table 3’s F-values lack degrees of freedom (e.g., *F=7.1, P<0.001* should include df).

Response: The degrees of freedom or df are listed in Table 3, and are highlighted in yellow.

8. The PSQI subscale analysis (Table 2) reports P-values without effect sizes (e.g., Cohen’s *d*). Include these to quantify clinical significance.

Response: Cohen's d values are listed in Table 2, and are highlighted in yellow.

9. Data Anomalies: The control group’s sleep quality worsened on day 15 (*13.1 ± 6.15* vs. baseline *11.89 ± 6.32*). Discuss potential confounding factors (e.g., dialysis schedule, stress).

Response: We discussed this in the results section of Table 3 and highlighted it in yellow.

"Although the sleep quality of the control group worsened on the 15th day, this change was not statistically significant ($P > 0.05$) and may have been due to other underlying factors such as stress that were beyond the researcher's control (Table 3)."

@ Discussion

10. Contradictory Literature: The manuscript contrasts with studies showing no SSBM benefit (e.g., Harris et al., Williamson et al.). Address this discrepancy explicitly—e.g., population differences (hemodialysis vs. postmenopausal women) or intervention fidelity.

Response: We discussed these discrepancy and highlighted them in yellow.

In Williamson study “The lack of consistency may be attributed to the study population, as the research by Williamson focused on postmenopausal women, and the physiological and psychological changes during this period can affect sleep in women.”

The study of Harris et al., in which light pressure was applied, and the session duration was the shortest by 3 minutes, it was found that back massage did not improve sleep quality (13). There is no common view for the duration of back massage. But it seems that the longer duration of massage, the more effective it is.

11. Limitations: The subjective nature of PSQI is acknowledged, but consider adding actigraphy or caregiver reports to strengthen findings.

Response: We added caregiver reports to strengthen findings, and highlighted them in yellow.

“One of the strengths of this study is that it effectively improved sleep quality in patients such as increase sleep duration, fall asleep faster and sleep better without any side effects.”

@ Ethical & Revisions

12. Author Responses: The word count reduction is confirmed, but other reviewer queries (e.g., statistical corrections) are not addressed.

Response: In the first round of review (R1), all the questions and suggestions of the reviewers were answered and the review responses were uploaded on the journal's website, but after the responses were uploaded, only one question was asked again to reduce the number of words in the manuscript. Therefore, only one question was answered.

@ Recommendations & Questions

Statistical Corrections:

13. Clarify the implausible SDs in the abstract (e.g., ±19.39 and ±55.2).

Response: The mean and standard deviation numbers were shifted, which was corrected.

“On the 30th day, the mean sleep quality score was 10.19±5.39 in the intervention group compared to 12.55±6.2 in the control group.”

14. Report effect sizes for PSQI subscales (Table 2) and include df for F-statistics (Table 3).

Response: We reported effect sizes for PSQI subscales (Table 2) and included df for F-statistics (Table 3), and highlighted them in yellow.

@ Methodological Transparency:

15. Detail allocation concealment (e.g., sealed envelopes) and assessor blinding.

Response: Allocation concealment mentioned in the manuscript and are highlighted in yellow.

“Using a simple randomization method, each of the selected patients was randomly assigned a number and their name was written on the envelopes and given to someone who was unaware of

the study objectives. Then, all the sealed envelopes were placed in a container and, based on chance, the first 30 numbers taken out of the container were assigned to the intervention group and the second 30 numbers were assigned to the control group."

16. Justify the 3–7 PM massage timing with references or pilot data.

Response: In the study by Raiesifar et al. (2021), the sample size was calculated by including a 10% attrition rate.

3.Raiesifar Z, Molavynejad Sh, Raiesifar A, Maraghi E, Vaismoradi M, Helalat A. The effect of slow-stroke back massage on fatigue and sleep quality in hemodialysis patients: A clinical trial study. Hayat, Journal of School of Nursing and Midwifery, Tehran University of Medical Sciences. 2021; 27(1): 59-71. URL: http://hayat.tums.ac.ir/article-1-3978-en.html.

@ Intervention Fidelity:

17. Describe steps to ensure consistent massage pressure/duration across sessions and are highlighted in yellow.

Response: We described the total massage duration per session and the duration of each step.

"A research assistant provided the SSBM thrice weekly for 10 minutes per session.

The stages of SSBM are as follows: The patient lies on a hard bed, 20 small circular movements are made with the thumbs for 1 minute on the neck. Then the lumbar spine is massaged from the base of the skull to the sacrum with the palm of one hand, and this process is repeated on the other side of the spine with the palm of the other hand, while the first hand is moved towards the base of the skull. The number of movements was 60 times within 4 minutes. After that, 20 strokes are made with the thumb along the shoulder blades for 30 seconds. Strokes with the thumbs are made on both sides of the spine from the shoulder to the lower back for 1 minute. Then, sweeping strokes are made with both hands from the neck to near the sacrum. The number of movements in this stage is 40 movements within three and a half minutes"

@ Limitations:

18. Discuss how uncontrolled variables (e.g., dialysis timing) may bias results.

Response: Based on the results in Table 1, highlighted in yellow in the results section: "Comparison of demographic characteristic of patients before intervention show that there was no significant difference between the two groups". Therefore, there was no difference between the two groups in terms of variables such as dialysis duration.

19. Correct typographical errors (e.g., "rutin care" → "routine care," line 10).

Response: We corrected "rutin care" → "routine care," in line 10

20. Standardize abbreviations (e.g., "SSBM" is defined late in the text).

Response: Slow stroke back massage (SSBM) is first mentioned in this section of the introduction, so its abbreviated name is also mentioned here.

3 Revision 2

2 comments · 31 Jul 2025 – 2 Aug 2025

Associate Editor

ACCEPT 31 Jul 2025

The article is acceptable.

Editor-in-Chief

ACCEPT 2 Aug 2025

Accept