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The Magnitude of Anesthesiology Residents Burnout at Shahid Beheshti University of Medical Sciences: A Cross-Sectional Study

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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.

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1 Original submission

4 comments · 7 Feb 2025 – 15 Feb 2025

Referee 1 Reviewer

MINOR REVISION 7 Feb 2025

Dear AE,
The study provides a well-structured and detailed presentation of data on anesthesiology residents, covering multiple aspects such as demographics, sleep disorders, burnout, depression, and quality of life. It integrates quantitative findings with relevant literature, emphasizing the urgent need for burnout mitigation strategies.
However, SOME improvements are needed:
1. Some parts of the background could be more concise to improve readability.
2. Some sentences lack references. All sentences quoted from other articles must end with references.
For example:
"Burnout as a phenomenon was first described in 1974 by psychologist Herbert Freudenberger. This state is defined as a condition of physical and mental ....."
3. Some sentences could be streamlined for readability.
For example, the phrase:
"Employing a rigorous methodology, data collection was conducted ....."
4. The methodology states that SPSS version 26.0 was used, but it would be helpful to briefly outline the statistical tests applied (e.g., correlation analysis, regression models).
5. The study reports a 60.8% female participation rate but does not analyze whether burnout, sleep deprivation, and depression differ by gender.

6. The discussion primarily focuses on anesthesiology residents but could benefit from comparisons with other high-stress medical specialties (e.g., emergency medicine, surgery). Addressing whether these findings are unique to anesthesiology or generalizable to other fields would provide a broader perspective.

Referee 2 Reviewer

ACCEPT 14 Feb 2025

Dear Author

Thank you for this research. It was well conceived, and you carried it out well.

Thank you

Associate Editor

MINOR REVISION 15 Feb 2025

Dear EIC,
I thank the authors and express my appreciation to the researchers. This study aimed to assess the prevalence of burnout and its associations with depression, sleep quality, and quality of life among anesthesiology residents at Shahid Beheshti University of Medical Sciences. The manuscript presents valuable research. But some revisions are needed. The authors should revise it based on the comments. Also, a minor change should be made to the abstract:
A summary of the statistical analysis results should be mentioned in the results section.

Editor-in-Chief MINOR REVISION 15 Feb 2025

Dear Author,
Thank you for submitting the article. It needs some revision. Please revise it based on the reviewers' and AE's comments.

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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.

Dear Editor-in-Chief,

Thank you for considering our manuscript and for providing us with the opportunity to revise and improve it. We sincerely appreciate the constructive feedback from the reviewers and Associate Editors, which has helped us identify areas for enhancement.

We have carefully addressed all comments and suggestions. All new sections and changes made in response to the reviewers' comments are highlighted in yellow in the revised manuscript for easy identification. Additionally, we have provided a point-by-point response to each reviewer's comment below.

We believe these revisions have significantly improved the quality and clarity of the manuscript. Thank you again for your guidance and for the opportunity to refine our work. We look forward to your feedback on the revised version.

Sincerely,

A. Sh.

On behalf of the authors

Associate Editor's Comments:

Dear EIC,

Thanks to the authors and appreciation to the researchers. This study aimed to assess the prevalence of burnout and its associations with depression, sleep quality, and quality of life among anesthesiology residents at Shahid Beheshti University of Medical Sciences. The manuscript is a valuable research. But some revisions are needed. Authors should revise it based on comments. Also minor change should be done in abstract.

Summary of Statistical analysis results should be mention in result section.

Response to Associate Editor:

Dear Associate Editor,

Thank you very much for your kind words and positive feedback on our research. We are grateful for your recognition of the study's value and its contribution to understanding burnout among anesthesiology residents. We also appreciate your constructive suggestions for improving the manuscript.

We have carefully addressed all comments, including your specific request to include a summary of statistical analysis results in the **Results** section. Below, we outline the revisions made:

1. **Summary of Statistical Analysis in Results Section:**
    - We have added a summary paragraph at the end of the **Results** section, highlighting key statistical findings, including correlation results. This paragraph provides a concise overview of the relationships between burnout, depression, sleep quality, and quality of life.
2. **Changing in the Abstract:**
    - We have revised the **Abstract** to include a brief mention of the key statistical findings, ensuring that the summary of results is consistent with the updated **Results** section.
3. **Other Revisions Based on Reviewers' Comments:**
    - **Gender Differences:** We conducted exploratory post-hoc analyses to examine potential gender differences in burnout, depression, and sleep quality. While no significant differences were found, we have included these results in the **Results** and **Discussion** sections.
    - **Comparison with Other Specialties:** We expanded the **Discussion** to include comparisons with other high-stress medical specialties, such as emergency medicine and surgery, to provide a broader perspective on burnout.
    - **Streamlined Sentences:** We revised several sentences in the manuscript to improve readability and conciseness, as suggested by the reviewers.

All new sections and changes made in response to the reviewers' comments are **highlighted in yellow** in the revised manuscript for easy identification.

Reviewer 1:

Dear Author

Thank you for this research, It had good conception and you done it well.

Response to Reviewer's Comment:

Thank you very much for your kind words and positive feedback on our research. We greatly appreciate your recognition of the study's conception

and execution. Your encouragement motivates us to continue our efforts to address critical issues in medical education and resident well-being.

Reviewer 2:

Thanks for your submission and investigate such an important issue.

The description and design were well explained but there is a question in my mind that how did you equalized your cases basically in their psycho mental status?

for example you have to design a question method to evaluate them at first to be almost similar and then bring them to study and assess the residency problem and pressure on their burnout.

Response to Reviewer's Comment:

Thank you very much for your thoughtful feedback and for recognizing the importance of our research. We appreciate your question regarding the baseline psycho-mental status of participants and the need to ensure comparability among cases. Below, we address your concern in detail:

1. **Study Design and Objectives:** This study was designed as a **cross-sectional analysis** to assess the prevalence of burnout and its associations with depression, sleep quality, and quality of life among anesthesiology residents at a single point in time. While we did not conduct a pre-residency baseline assessment of mental health, we employed several strategies to ensure the validity and reliability of our findings:

2. **Homogeneous Sample:** All participants were drawn from a homogeneous population of anesthesiology residents at Shahid Beheshti University of Medical Sciences, undergoing similar training demands and work environments. This minimized variability in external stressors, allowing us to focus on the shared occupational pressures inherent to their residency program.

3. **Standardized, Validated Tools:** We used validated Persian versions of standardized tools, including the Maslach Burnout Inventory (MBI), Patient Health Questionnaire-9 (PHQ-9), Epworth Sleepiness Scale (ESS), and WHOQOL-BREF questionnaire. These tools are widely recognized for their reliability in measuring burnout, depression, sleep quality, and quality of life, ensuring consistent and comparable assessments across the cohort.

4. **Statistical Adjustments:** While we did not conduct baseline mental health screenings, our analysis included demographic factors (e.g.,

age, marital status, income) to account for potential confounders. Correlation analyses further elucidated relationships between variables, controlling for factors like emotional support and sleep quality.

5. **Focus on Associations, Not Causation:** As a cross-sectional study, our aim was to identify *associations* between burnout and its correlates, rather than establish causality. Longitudinal studies tracking residents from the start of training would be better suited to address baseline mental status and temporal changes, as noted in the study's limitations.

6. **Future Research:** We fully agree that pre-residency mental health evaluations would enhance understanding of how residency pressures exacerbate burnout. Future longitudinal studies could incorporate baseline assessments to control for pre-existing mental health conditions and track progression over time.

To address this point transparently, we have added the following paragraph to the **Discussion/Limitations** section and **highlighted it in yellow** in the revised manuscript for easy identification.

Reviewer 3:

Dear AE,

The study provides a well-structured and detailed presentation of data on anesthesiology residents, covering multiple aspects such as demographics, sleep disorders, burnout, depression, and quality of life. It integrates quantitative findings with relevant literature, emphasizing the urgent need for burnout mitigation strategies. However, SOME improvements are needed:

1. Some parts of the background could be more concise to improve readability.

2. Some sentences lack references. All sentences quoted from other articles must have references at the end of themselves. for example: Burnout as a phenomenon was first described in 1974 by psychologist Herbert Freudenberger. This state is defined as a condition of physical and mental .....

3. Some sentences could be streamlined for readability.

For example, the phrase: "Employing a rigorous methodology, data collection was conducted .....
4. The methodology states that SPSS version 26.0 was used, but it would be

helpful to briefly outline the statistical tests applied (e.g., correlation analysis, regression models).

5. The study reports a 60.8% female participation rate but does not analyze whether burnout, sleep deprivation, and depression differ by gender.

6. The discussion primarily focuses on anesthesiology residents but could benefit from comparisons with other high-stress medical specialties (e.g., emergency medicine, surgery). Addressing whether these findings are unique to anesthesiology or generalizable to other fields would provide a broader perspective.

Response to Reviewer 3:

Thank you very much for your detailed and constructive feedback. We appreciate your recognition of the study's strengths and your thoughtful suggestions for improvement. Below, we address each of your comments point by point and outline the revisions made to the manuscript.

1. ***Some parts of the background could be more concise to improve readability.***
    - **Response:** We have revised the whole **Background** section to remove redundancy and improve clarity while retaining essential context.
2. ***Some sentences lack references. All sentences quoted from other articles must have references at the end of themselves.***
    - **Response:** We have carefully reviewed the manuscript and added references to all sentences that lacked them, especially in the **background** section.
3. ***Some sentences could be streamlined for readability.***
    - **Response:** We have revised several sentences to improve readability and conciseness.
        1. "Employing a rigorous methodology, data collection was conducted through an online questionnaire meticulously designed to capture a wide array of risk factors associated with career burnout." Changed to "Data were collected using a structured online questionnaire that assessed multiple risk factors for career burnout."
        2. "The study procedure emphasizes ethical principles and voluntary participation, ensuring informed consent and respect for participants' autonomy, with participation

contingent upon explicit consent." Changed to "The study adhered to ethical principles, with participation requiring informed consent and respect for participants' autonomy."

3. "Data collection was meticulously conducted to adhere to ethical standards, and all collected data were securely recorded." Changed to "Data collection followed ethical standards, and all data were securely recorded."
4. "The observed relationship between emotional support and emotional exhaustion highlights an important avenue for addressing burnout among healthcare professionals." Changed to "Emotional support was strongly associated with lower emotional exhaustion, suggesting its potential role in mitigating burnout among healthcare professionals."
5. "Research similar to this study has consistently shown that burnout is prevalent among residents." Changed to "Consistent with prior studies, burnout is highly prevalent among residents."
6. "Additionally, this study identified sleep disorders as another significant factor in the development of career burnout." Changed to "Sleep disorders were also identified as a key contributor to career burnout."

4. The methodology states that SPSS version 26.0 was used, but it would be helpful to briefly outline the statistical tests applied (e.g., correlation analysis, regression models).

- **Response:** We have added a summary of the statistical tests applied, including descriptive statistics and Pearson's correlation analysis, to the **Methods** section.

5. **The study reports a 60.8% female participation rate but does not analyze whether burnout, sleep deprivation, and depression differ by gender.**

- **Response:** We conducted exploratory post-hoc analyses to examine potential gender differences in burnout, depression, and sleep quality. While no significant differences were found, we have included these results in the **Results** and **Discussion** sections.

6. **The discussion primarily focuses on anesthesiology residents but could benefit from comparisons with other high-stress**

medical specialties (e.g., emergency medicine, surgery). Addressing whether these findings are unique to anesthesiology or generalizable to other fields would provide a broader perspective.

- **Response:** We have expanded the **Discussion** to include comparisons with other high-stress specialties, such as emergency medicine and surgery, to provide a broader perspective.

2 Revision 1

3 comments · 18 Feb 2025 – 25 Feb 2025

Referee 1 Reviewer

ACCEPT 18 Feb 2025

Dear AE,
I reviewed the manuscript again. The great effort in improving the manuscript is highly appreciated.
The authors have addressed all comments.
Thank you

Associate Editor

ACCEPT 25 Feb 2025

Dear EIC.
Previous errors have been corrected, and there are no further recommendations.

Editor-in-Chief

ACCEPT 25 Feb 2025

Dear AUTHORS,
Thank you for your explanation, and I find your manuscript acceptable.