

## Peer Review File

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### Reviewer A

#### Comment 1:

First and foremost, although the paper is short, the paper demonstrates an impressive level of originality and thoroughness in its discussion. The authors have skillfully employed a well, thorough, and deep discussion, allowing for comprehensive understanding about the issue of nursing shortage in Japan. Furthermore, the paper presents a significant contribution to the existing body of knowledge in its field for Japanese Nurses shortage and for global nurses' shortage. The attention to detail is evident throughout the manuscript.

#### Reply 1:

Thank you for recognizing the originality and depth of our discussion. We are glad that our effort to provide a comprehensive understanding of the nursing shortage in Japan resonated with you. We aimed to contribute to both the national and global context of this issue, and your acknowledgment encourages us.

#### Comment 2:

One of the notable strengths of this paper is its clarity of presentation. The authors have employed a concise and articulate writing style, effectively conveying complex national healthcare issue in Japan without sacrificing depth or nuance. The logical flow of the manuscript allows readers to follow the arguments effortlessly, facilitating comprehension and engagement with the material.

#### Reply 2:

We appreciate your praise for the clarity of our presentation. Communicating complex issues related to national healthcare in Japan was indeed a challenge, and we are pleased that our writing style allowed readers to engage effortlessly with the material. Your feedback affirms that we achieved our goal of clarity without losing depth.

#### Comment 3:

Moreover, the paper exhibits a high degree of originality and creativity. The authors have approached the topic from a fresh perspective, offering innovative interpretations and suggesting new suggested solutions. Additionally, the paper subtly showcases a commendable attention to the broader implications of the research, education, administration, and practice in nursing field. This relevance and applicability enhance the paper's impact and make it of great interest to a wide range of readers.

#### Reply 3:

Thank you for highlighting the originality and creativity of our approach. We aimed to provide fresh perspectives and innovative solutions, considering the broader implications in various aspects of the nursing field. Your recognition of the relevance and applicability of our work is encouraging, and we hope it will indeed interest a wide range of readers.

**Comment 4:**

In conclusion, I would like to commend the authors for their outstanding work on this paper. The meticulous discussion and literature review, profound insights, and excellent presentation make it a truly remarkable contribution to the field. I strongly recommend its publication, as it will undoubtedly enrich scholarly discussions and inspire further investigation.

**Reply 4:**

We are sincerely grateful for your commendation and strong recommendation for publication. Your acknowledgment of the meticulous discussion, profound insights, and excellent presentation is deeply appreciated. We hope that this paper will contribute to scholarly discussions and inspire further investigation, as you have insightfully noted. Thank you once again for your thoughtful review.

**Reviewer B****Comment 1:**

An impressive article and an area of research that would uplift the development of health in Japan. Good work done and tapping in other spheres of research investigations will put your work in the map. Keep it up.

**Reply 1:**

Thank you for your encouraging words and recognition of our work's potential impact on health development in Japan. Your suggestion to explore other spheres of research is noted, and we are motivated to continue our efforts. Your support inspires us to keep pushing forward.

## **Reviewer C**

### **Comment 1:**

The summary of the rationale of the crisis in Japan is comprehensive. I feel that the article lacks specific suggestions on how the nursing shortage (that is only 10-15% of what it should be) has very general suggestions and nothing new that is not already in all of the literature. It does not recommend anything new. Most of the article explains the reason for the shortage but only the last paragraph really discusses solutions and they are vague. If more emphasis could be put on specific interventions that could be implemented, I would be more inclined to accept it. Maybe more like a QI project and discuss the results. This is more like a literature review.

### **Reply 1:**

Thank you for your thoughtful comments and insights on our manuscript. We truly appreciate your recognition of the comprehensive summary of the rationale for the crisis of nursing shortage in Japan. In response to your comments, we have revised the manuscript to include more detailed and innovative recommendations in terms of the introduction of generative AI such as ChatGPT into healthcare.

### **Changes in the text:**

Page 8 Line 125

“Considering the factors mentioned above, Japan's nursing shortage and uneven distribution may be addressed innovatively through the integration of AI technology like ChatGPT. Indeed, our previous research has elucidated that ChatGPT exhibits sufficient performance, surpassing the passing score in the Japanese national nursing examination.<sup>6</sup> By leveraging ChatGPT's individualized and instantaneous response capabilities, it offers personalized care support, real-time assistance with medical administrative tasks, and educational tools for the development of nursing staff. Furthermore, ChatGPT's faculty for understanding and translating multiple languages can mitigate communication barriers within medical institutions, thereby affording foreign nurses immediate support in comprehending and engaging with Japanese-speaking patients and peers. Such technology aligns with existing measures to enhance the quality and quantity of nursing care and its versatility in addressing various facets of the nursing crisis holds potential for leading to a more resilient healthcare system for all citizens of Japan. Therefore, the urgent need to discuss how to implement ChatGPT technology in the nursing field, with an understanding of its risk of generating erroneous information and recognizing its limitations,<sup>7</sup> is an essential theme that transcends domestic and international boundaries, particularly in medical settings demanding operational efficiency, requiring the prompt establishment of clear guidelines.<sup>8</sup>

In conclusion, addressing Japan's nursing shortage requires a comprehensive approach, encompassing both immediate efforts and long-term strategies. Enhancing social awareness of the crisis and expanding governmental support for life events like marriage and pregnancy can

promote sustainable working conditions for nurses. Simultaneously, we must consider the use of innovative solutions like AI integration through ChatGPT not only to enhance individualized care and real-time support but also to foster global collaboration, enriching both the quality and quantity of nurses.”