
Potential Benefits and Challenges of ChatGPT in Future Nursing Education

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REVIEW

Potential Benefits and Challenges of ChatGPT in Future Nursing Education

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Abstract

Generative Pre-trained Transformer (ChatGPT) is a language model that has the potential to revolutionize nursing education and research by making it a quick and time-efficient process. This article highlights the challenges and opportunities this technology presents to nursing and health science education, including concerns around academic integrity and privacy and the need for educators to adapt quickly to ensure staff training and comprehensive policies are in place. Furthermore, educators and educational institutions firmly oppose the utilization of ChatGPT, perceiving its application as a direct menace to academic honesty, which might have an impact on academic, educational, and public well-being.

Keywords: Challenges, ChatGPT, Future nursing, Nursing education

In recent times, new artificial intelligence (AI) models that utilize a massive amount of data and computational techniques have been developed to create meaningful word combinations for making predictions. In November 2022, Open AI, an AI company, released a viral bot named Generative Pre-trained Transformer (ChatGPT). This bot has been tested across various domains, such as education and training, entertainment, question prediction, appointment scheduling, and code debugging. It has also been used in healthcare to provide medical assistance and information [1]. ChatGPT is a conversational model chatbot that is highly interactive and capable of performing advanced functions, such as seeking and clarifying through follow-up questions, questioning assumptions, and challenging underlying definitions. It can generate new text based on different inputs and is available for free. ChatGPT provides fast, comprehensive, and logical responses in any genre and format, which is not detectable by current plagiarism software [2]. ChatGPT responds coherently and compellingly within seconds of receiving a query and can equally respond meaningfully to follow-up prompts. Nurses and other healthcare professionals are faced with a difficult decision on

whether to engage with ChatGPT. Some may avoid it due to fear of technology and its potential effect on education, but ignoring ChatGPT can harm student learning and make educational approaches appear outdated. Avoidance also means missing out on the opportunity to integrate ChatGPT into learning [3]. On the other hand, opposing ChatGPT and prohibiting its use is also not a guaranteed solution. It may be difficult to monitor and enforce and may prevent teachers from assessing ChatGPT outputs by students. The stance against ChatGPT is often related to concerns about academic integrity, privacy, and security, which can have implications for academia, education, and public safety. It is important to find a balanced approach that recognizes both the potential benefits and risks of ChatGPT and provides a framework for its responsible use in education [4]. The article discusses the challenges and opportunities that this technology presents to nursing and health science education, including concerns about academic integrity and privacy and the need for educators to quickly adapt to ensure comprehensive policies and staff training are in place.

Patients are likely to seek information and answers regarding their health concerns from

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ChatGPT. To provide effective support and education to patients under their care, nurses and healthcare professionals need to have a working understanding of ChatGPT. ChatGPT also has the potential to assist physicians in hospital settings by saving time and allowing them to focus on providing care to the patients, particularly in the Intensive Care Unit where multiple patient information requires constant monitoring, including treatment progress, laboratory values, results of microbiological, and calculation of fluid balance. Another potential use of ChatGPT is integrating it into education processes and assessments [5]. However, this requires educators to rethink assessment strategies that emphasize the process rather than an endpoint, such as essays for grading. Although ChatGPT poses a significant threat to academic integrity, educational institutions can reduce the risk of its misuse by enforcing academic integrity policies, employing plagiarism detection software, and providing staff training on ChatGPT's current limitations and upcoming improvements. ChatGPT's ability to integrate emotion, projection, and reaction makes it a transformative tool for medical professionals and educators when facing critical decisions. However, its broad application must balance privacy, security, and academic integrity risks with potential benefits. Educators must acknowledge ChatGPT's rapid development and scalability and adapt their assessment processes, institutional approaches, and policies accordingly to keep pace with this evolving AI technology [6].

1. Future of nursing education and research with ChatGPT

ChatGPT is an AI tool that utilizes large language models to generate human-like responses to text-based inputs, and it has found various applications in the fields of medical, nursing education, and research. While some scientific experts suggest that ChatGPT could revolutionize medical writing by making it quick and time-efficient, there are concerns about its impact on medical education and research [7]. Some of these issues include a lack of critical thinking, redundant and irrational information, ethical concerns, medicolegal and copyright issues, and the inaccuracy of content. Although ChatGPT can help in writing scientific papers, it has limitations in conducting thorough literature searches, critical analysis, and discussions of articles. Moreover, its training data is outdated and could be misused [8]. While ChatGPT can be used to review material and rephrase text, there is a risk that its use

may result in papers lacking clinical reasoning and critical thinking. There are also concerns that students may use ChatGPT to cheat during exams, hindering their ability to develop original ideas and present sound arguments [9]. Nonetheless, ChatGPT has potential uses in medical education and clinical decision-making, as discussed in Dr Biswa's article "ChatGPT and the future of medical writing." It can help extract information, conduct literature reviews, and even create a rough draft for medical writers. Its use in medical research remains a topic of debate, with some experts arguing it could generate new hypotheses and assist in data analysis, while others worry it may lack critical thinking and clinical reasoning. However, it is essential to note that ChatGPT cannot replace human intelligence and critical thinking. Therefore, human intellect is necessary to crosscheck data generated by AI systems, along with policies to regulate their access [10].

2. Potential benefits of using ChatGPT in nursing education and research

ChatGPT is a language model that has the potential to be used in nursing education and research. According to a study published in the *Biology Engineering and Medicine Science Report*, ChatGPT has several benefits, including improving scientific writing, enhancing research equity and versatility, and being useful in healthcare research. It can efficiently analyze datasets, generate code, conduct literature studies reviews, save time to focus on experimental design and aid in drug discovery and development. Another study published in the *Macedonian Journal of Medical Sciences* suggests that it can be used ChatGPT to answer questions regarding cirrhosis and hepatocellular carcinoma. Additionally, there are also concerns about using ChatGPT in education [8]. According to an article published in the *Taylor & Francis Online*, ChatGPT can be easily used by students to cheat in exams, leading to a loss of original ideas and the inability to present proper arguments. However, privacy and security concerns are also associated with using ChatGPT in higher education. Although there are worries surrounding ChatGPT, it has the ability to transform medical writing by streamlining the process and making it faster and more efficient. ChatGPT can provide more information, aid in literature studies, and even generate preliminary drafts for medical writers. In nursing education, ChatGPT can be used to aid in research and writing assignments. However, using ChatGPT ethically and responsibly is important to avoid negative consequences [11].

3. Can artificial intelligence help with scientific writing?

ChatGPT is a tool that can assist medical scientists and researchers in writing articles, abstracts, and literature research by providing suggestions for structure, references, titles, and even a full paper draft. Although using ChatGPT in scientific writing can increase the speed and efficiency of the writing process, there are ethical concerns associated with its use. It is important to note that ChatGPT is not a replacement for human expertise, as it has limitations in generating accurate text on various topics [12]. However, ChatGPT and AI research assistants can be helpful in the process of review by locating academic papers, summarizing conclusions, and identifying uncertainty areas. This could help physicians quickly understand the current state of knowledge. ChatGPT can help with writing by proposing titles for the method sections used in the study, justifying sample sizes, and describing data analysis techniques. It is also effective in editing, although the results are not always satisfactory. A scientific paper's writing process requires human researchers' guidance and supervision [10].

Chatbots can be useful but should not be seen as a substitute for human expertise, personality, judgment, and accountability. Although chatbots can generate text that appears to be written by a human, the phrasing and word choice may be less subtle, the language may be more ambiguous, and there may be inconsistencies. However, it is important to recognize that chatbots cannot replace humans. Ethical concerns also limit the use of chatbots for scientific writing because humans can commit plagiarism by repeating others' findings, statements, and written works without properly referencing the original authors [9]. However, it could not be considered acceptable to use programs to reformulate sentences and writing to reduce the percentage of plagiarism. AI tools can increase publication numbers without increasing experience. This can cause ethical issues when hiring professionals. If ChatGPT and other chatbot services become paying in the future, it could lead to a further disparity between high- and low-income countries for scientific production [3].

4. Ethics of using AI-based tools in research writing

Artificial Intelligence (AI) has shown great potential to revolutionize the way research is carried out. Using AI-based tools in research writing brings a new level of efficiency, accuracy, and productivity

to the process. Open AI-based tools, in particular, raise unique ethical considerations that need to be addressed. The promise of open AI-based tools is unprecedented, as they offer free access to cutting-edge technology that would have been otherwise unattainable [13].

This openness encourages collaboration and democratizes research and innovation worldwide. However, the use of these tools also poses ethical challenges. For instance, institutions might not have the resources to regulate and monitor the use of tools by individuals, leading to the potential abuse of these technologies. It is, therefore, vital to establish clear guidelines around using these tools to ensure their potential is harnessed without causing harm to individuals and society at large. Another ethical concern about using AI-based tools in research writing is the potential risk of privacy violations [5].

The security and privacy of research participants must be considered; personal information should be protected, and data should be anonymized wherever possible. Using AI-based tools brings another risk: the possibility of automated decision-making biased by training data. For instance, some models may be trained using diverse data sets, limiting their accuracy and applicability. Emerging AI technologies can also enable synthetic data creation, replicating real data with high accuracy. This generates a potential risk of ethical violations, especially if the synthetic data is not accurately represented. It is essential to evaluate every data set and ensure they adhere to appropriate ethical standards before using AI-based research writing applications [14].

5. Future potentials and limitations of AI in research writing

Artificial intelligence (AI) has the potential to revolutionize research writing by improving the speed and accuracy of data analysis and interpretation. This transformative technology can provide deep insights into complex datasets, perform predictive analysis, and accelerate research. Open AI-based tools, which are readily accessible to anyone, are currently a growing trend in research writing that offers exciting possibilities for expanding the use of AI in different fields. However, as with any technology, some limitations must be considered. One potential limitation of AI in research writing is the quality of the input data. The data needs to be comprehensive, accurate, and representative to draw valid conclusions from AI-generated insights. Moreover, incorrect or incomplete data could lead to less accurate results or even completely

erroneous conclusions. Hence, it is crucial to ensure that AI-based tools for research writing are built upon appropriate datasets and that the quality of the input data is verified. Researchers should also be aware of potential biases in the data, which could lead to skewed results [2].

Another potential limitation of AI in research writing is the interpretation of results. While AI algorithms may be excellent at identifying patterns in large datasets, they are not yet equipped to understand the context and meaning behind the data. Researchers still need to provide the interpretation and explanations for the results. Hence, balancing using AI tools to generate data insights and investing human expertise and knowledge to make the right conclusions is essential. Despite these limitations, Open AI-based tools have enormous potential in research writing. These tools provide easy access to powerful algorithms and computational resources, which can offer a scalable and cost-effective way to enhance research productivity. For instance, AI-based tools can help researchers identify patterns and relationships within vast amounts of data, which could lead to more accurate predictions or hypotheses that can be tested further [11].

Finally, ChatGPT can provide assistance to nursing students in their education, research, and clinical practice. With its ability to generate human-like responses to text-based inputs, ChatGPT can be employed in various aspects of nursing education, including simulation scenarios, clinical case studies, and patient education materials. Using ChatGPT; nursing students can enhance their critical thinking and problem-solving skills by engaging with a virtual patient or caregiver [15]. This can help them identify patient needs, recognize potential complications, and develop appropriate interventions. ChatGPT can also assist in creating high-quality research papers, providing literature searches, and rephrasing text. This can save time and effort, allowing students to focus on the more complex aspects of nursing education [16]. However, there are concerns about ChatGPT's impact on nursing education, including the potential for students to rely too heavily on the tool and fail to develop their critical thinking and clinical reasoning skills. In addition, there are ethical concerns about the use of AI in healthcare and the need for nursing educators to address these concerns with their students. ChatGPT is a valuable tool that can help to reimagine nursing education by enhancing students' skills and enabling them to engage with patients and caregivers in new ways. However, its use should be balanced with traditional nursing

education methods to ensure students develop the critical thinking and clinical reasoning skills necessary for success in their future careers [17].

6. Enhancing nursing education by ChatGPT

ChatGPT can be a valuable tool in nursing education, offering various applications and benefits. ChatGPT can be used as a conversational partner for nursing students, allowing them to practice and reinforce their knowledge through interactive dialogue. Students can ask questions, seek clarification, or engage in simulated patient interactions, helping them develop critical thinking and decision-making skills. Also, can serve as a virtual patient, presenting students with different clinical scenarios and responding to their actions and inquiries [18]. This enables students to apply their theoretical knowledge in a realistic context, practice clinical reasoning, and enhance their communication and assessment skills. ChatGPT can adapt to individual student needs by providing customized feedback and guidance. It can assess students' understanding of concepts, identify knowledge gaps, and offer tailored explanations or additional resources to support their learning journey. ChatGPT can provide on-demand access to information, eliminating barriers of time and location. Students can engage with the AI-powered chatbot anytime, anywhere, enabling self-directed learning and quick access to relevant nursing content [19].

In conclusion, ChatGPT has the potential to revolutionize nursing education and research by making it a quick and time-efficient process. However, its impact on medical education and research is still debated. While it can assist with nursing education and clinical decision-making, it is not a substitute for human intelligence and critical thinking. Therefore, it is important to use ChatGPT responsibly and with caution.

Author's contributions

The author contributed to creating and writing the article's conception and drafted the manuscript, providing essential feedback and conducting a critical analysis. The author also helped obtain the necessary data, the final version of the manuscript was approved, and agreed to be accountable for the study's accuracy and integrity, meeting at least one of the following standards.

Conflicts of interest

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Consent for publication

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