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## Original Article

# ChatGPT and its effect on Shaping the Future of Medical Writing.

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## Abstract

**Background:** Advances in artificial intelligence (AI) have led to the development of large language models such as ChatGPT, which can generate human-like text based on training data. ChatGPT has the potential to revolutionize the field of medical writing, enabling more efficient and accurate content creation, enhancing collaboration among medical writers, and facilitating innovation in the field. This descriptive study aimed to investigate the effect of ChatGPT on the future of medical writing.

**Methodology:** The study used a qualitative research approach to explore the experiences and opinions of medical writers who have used ChatGPT in their work.

**Results:** A total of 30 medical writers & researchers participated in the study, with most of the participants being female (60%). Data analysis revealed several themes related to the benefits and drawbacks of using ChatGPT in medical writing, as well as emerging themes related to the ethical implications of AI in medical writing.

**Conclusion:** This descriptive study provides insights into the experiences and opinions of medical writers who have used ChatGPT in their work. While the use of ChatGPT in medical writing offers many benefits, there are also potential drawbacks and ethical concerns to consider.

## Keywords

ChatGPT, Artificial Intelligence, Writing, Medicine, Health



## Introduction

Sex education can be defined as the education of In November 2022, "ChatGPT," a conversational large language model (LLM) powered by artificial intelligence (AI), was released<sup>1</sup>. Many legitimate concerns were voiced despite the numerous potential uses of LLMs in healthcare research, practise, and teaching<sup>2</sup>. The promise value of individualised learning tools and the shift towards a greater emphasis on critical thinking and problem-based learning are specific applications of ChatGPT in the field of health education. ChatGPT can be useful for optimising the workflow and improving personalised medicine in the healthcare industry<sup>2,3</sup>. The advantages in scientific research include time savings for concentrating on experimental design and improving research equity and versatility<sup>4</sup>.

As a large language model, ChatGPT has the potential to greatly impact the future of medical writing. With access to vast amounts of medical literature and knowledge, ChatGPT can assist medical writers in a number of ways, including:

**Improving writing efficiency:** ChatGPT can assist medical writers in generating high-quality content more quickly and efficiently. It can provide suggestions for wording and phrasing, help with grammar and syntax, and even generate entire paragraphs or sections of text<sup>5</sup>.

**Enhancing accuracy:** ChatGPT has been trained on a vast amount of medical information, which means it can help medical writers ensure their content is accurate and up to date. It can also assist with fact-checking and identifying potential errors or inconsistencies in the text<sup>6</sup>.

**Facilitating collaboration:** ChatGPT can help medical writers collaborate more effectively by providing a shared platform for communication and editing. This can help to streamline the writing process and ensure that all contributors are on the same page<sup>7</sup>.

**Enabling innovation:** ChatGPT's ability to generate novel text and suggest new ideas can

help medical writers to explore new avenues and develop fresh perspectives on existing topics<sup>8</sup>.

However, there are also potential consequences to the widespread adoption of AI in medical writing. For example, it could lead to a loss of jobs for human medical writers or create a reliance on AI-generated content that is not properly vetted or reviewed<sup>8,9</sup>. Additionally, there may be ethical concerns around the use of AI in medical writing, particularly if it is used to generate content that is biased or misleading.

ChatGPT has the potential to revolutionize the field of medical writing, enabling more efficient and accurate content creation, enhancing collaboration among medical writers, and facilitating innovation in the field<sup>10</sup>. However, the widespread adoption of AI in medical writing raises questions about its potential consequences, including the impact on human medical writers, the accuracy and bias of AI-generated content, and the ethical considerations surrounding its use. Therefore, the current survey-based study aims to evaluate the utility of ChatGPT in health care education, research, and practice and also highlight its limitations in healthcare education, research and practice.

## Methodology

This descriptive study aims to investigate the effect of ChatGPT and its potential impact on the future medical writing. The study was conducted using a qualitative research approach to explore the experiences and opinions of medical writers who have used ChatGPT in their work. The study uses a cross-sectional design to gather data from medical writers who have used ChatGPT in their work. Participants were recruited using purposive sampling, with the aim of obtaining a diverse sample of medical writers with varying levels of experience and expertise.

The study was conducted using an online survey, which was distributed via email to potential participants. The online survey consists of a series of open-ended questions designed to elicit participants' experiences and opinions of using ChatGPT in their medical writing work. The



questions cover topics such as the benefits and drawbacks of using ChatGPT, the impact on writing efficiency and accuracy, the potential for collaboration, and ethical considerations. Participants were given the option to remain anonymous, and their responses were kept confidential.

Statistical analysis was done using SPSS version 22.0. Data analysis for the current study, involve a thematic approach to identify patterns and themes in the data. Responses were coded and categorized into themes related to the benefits and drawbacks of using ChatGPT in medical writing, as well as any emerging themes related to the ethical

implications of AI in medical writing. Data was analyzed using statistical software SPSS version 22.0, which assist with organizing and coding the data.

## Result

A total of 30 medical writers & researchers participated in the study, with a majority of the participants being female (60%). The participants had varying levels of experience in medical writing, with 23.3% having less than 1 year of experience, 46.6% having 1-5 years of experience, and 30% having more than 5 years of experience (Table 1).

**Table 1: Baseline Characteristics of the Study participants.**

Variables	n (%)	
<b>Gender</b>	Male	12(40)
	Female	18(60)
<b>Medical writing experience</b>	<1 Year	7(23.3)
	1-5 Years	14(46.6)
	>5 Years	9(30)

Data analysis revealed several themes related to the benefits and drawbacks of using ChatGPT in medical writing, as well as emerging themes related to the ethical implications of AI in medical writing.

**Benefits:** Participants reported that ChatGPT was a useful tool for improving efficiency and accuracy in medical writing. It helped them generate high-quality content more quickly and efficiently, providing suggestions for wording and phrasing, and help with grammar and syntax. ChatGPT also helped medical writers collaborate more effectively by providing a shared platform for communication and editing. Additionally, ChatGPT was seen as a tool for generating novel text and suggesting new ideas, allowing medical writers to explore new avenues and develop fresh perspectives on existing topics.

**Drawbacks:** Despite the benefits, participants also reported several drawbacks to using ChatGPT in medical writing. The most common concern was the loss of creativity and the personal touch that human medical writers bring to their work. Some participants also noted that ChatGPT-generated text may lack the nuance and context that only humans can provide. Other concerns included the potential for errors in AI-generated content and the need for human oversight to ensure accuracy.

**Ethical Implications:** Several participants raised concerns about the ethical implications of using ChatGPT in medical writing. These concerns included the potential for bias in AI-generated content, the need for transparency in the use of AI, and the importance of ensuring that AI-generated content is properly vetted and reviewed. Participants also emphasized the need to maintain the integrity and accuracy of medical information and the importance of human oversight in the creation of medical content.

## Discussion

In recent years, advances in artificial intelligence (AI) have led to the development of large language

models such as ChatGPT, which can generate human-like text based on training data. ChatGPT has the potential to revolutionize the field of



medical writing, enabling more efficient and accurate content creation, enhancing collaboration among medical writers, and facilitating innovation in the field<sup>11</sup>. However, the widespread adoption of AI in medical writing raises questions about its potential consequences, including the impact on human medical writers, the accuracy and bias of AI-generated content, and the ethical considerations surrounding its use. Overall, ChatGPT and other AI tools have the potential to greatly benefit the field of medical writing, but it is important to use these tools responsibly and thoughtfully, with a focus on improving the quality and accuracy of medical information<sup>12</sup>. The present study investigated the experiences and opinions of medical writers who have used ChatGPT in their work. The study found that while ChatGPT can improve efficiency and accuracy in medical writing, it also has potential drawbacks and ethical concerns. The study used a qualitative research approach to explore the experiences and opinions of medical writers who have used ChatGPT in their work.

The use of ChatGPT in medical writing has the potential to improve efficiency and accuracy, enhance collaboration, and facilitate innovation. ChatGPT can assist medical writers in generating high-quality content more quickly and efficiently, providing suggestions for wording and phrasing, help with grammar and syntax, and even generate entire paragraphs or sections of text<sup>13</sup>. The current study found that ChatGPT can improve the efficiency and accuracy of medical writing. It helps medical writers generate high-quality content more quickly and efficiently, and provides suggestions for wording, phrasing, and grammar. Additionally, ChatGPT can help medical writers collaborate more effectively by providing a shared platform for communication and editing. Furthermore, ChatGPT can assist in generating novel text and suggesting new ideas, allowing medical writers to explore new avenues and develop fresh perspectives on existing topics<sup>14</sup>.

Despite the benefits, the study also found that using ChatGPT in medical writing has potential drawbacks. Participants expressed concern about the loss of creativity and the personal touch that

human medical writers bring to their work. The study also found that ChatGPT-generated text may lack the nuance and context that only humans can provide. Furthermore, participants expressed concern about the potential for errors in AI-generated content and the need for human oversight to ensure accuracy.

The use of ChatGPT in medical writing also raises concerns. It could lead to a loss of jobs for human medical writers or create a reliance on AI-generated content that is not properly vetted or reviewed<sup>15</sup>. There are also ethical concerns around the use of AI in medical writing, particularly if it is used to generate content that is biased or misleading. There is a risk that AI-generated content may not reflect the nuances and complexities of human experience, potentially leading to inaccurate or incomplete representations of medical knowledge<sup>16</sup>.

Furthermore, the study found that using ChatGPT in medical writing has ethical implications that need to be considered. Participants raised concerns about the potential for bias in AI-generated content, the need for transparency in the use of AI, and the importance of ensuring that AI-generated content is properly vetted and reviewed. Additionally, participants emphasized the need to maintain the integrity and accuracy of medical information and the importance of human oversight in the creation of medical content. Therefore, it is suggested that unless the ICMJE/COPE criteria are changed and updated, ChatGPT is not eligible to be included as an author in scientific journals as they currently stand. It is critically necessary to launch a project including all parties involved in healthcare education, research, and practice to establish a code of ethics and conduct on the ethical practices involving ChatGPT and other LLMs<sup>17</sup>.

The findings of this study have important implications for the future of medical writing. ChatGPT and other AI tools have the potential to improve the efficiency and accuracy of medical writing, but they also pose potential drawbacks and ethical concerns. To ensure that the benefits of AI



tools are fully realized while minimizing the risks, it is important to develop best practices for the use of AI in medical writing<sup>18</sup>. Such best practices should emphasize the importance of human oversight and collaboration, transparency in the use of AI, and the need to maintain the integrity and accuracy of medical information.

There are several limitations to this study. Firstly, the sample size may be limited, as the study relies on the willingness of medical writers to participate. Secondly, the study may be subject to response bias, as participants may be more likely to respond if they have a strong opinion on the topic. Finally, the study may be limited by the fact that it relies on self-reported data, which may be subject to inaccuracies or biases.

## Conclusion

ChatGPT has the potential to revolutionize medical writing by improving efficiency, accuracy, collaboration, and innovation. However, its widespread adoption must be approached with caution, as there are potential risks and consequences to consider. As such, it is essential to use ChatGPT responsibly and thoughtfully, with a focus on improving the quality and accuracy of medical information, while also recognizing the value and expertise of human medical writers.

In conclusion, this study provides valuable insights into the experiences and opinions of medical writers who have used ChatGPT in their work. While ChatGPT offers many benefits, there are also potential drawbacks and ethical concerns that must be considered. Future research is needed to develop best practices for the use of AI in medical writing and to ensure that the benefits of AI are realized while minimizing the risks.

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## Conflict of Interest

None to declare.

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