



**LITERATURE REVIEW ON THE DOUBLE-EDGED SWORD OF AI IN MENTAL HEALTH: A DEEP DIVE INTO CHATGPT'S CAPABILITIES AND LIMITATIONS**  
*Tinjauan Pustaka Tentang Pedang Bermata Dua AI Dalam Kesehatan Mental: Mendalami Kemampuan Dan Keterbatasan ChatGPT*

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**ABSTRACT**

**Background:** This paper focuses on the increasing relevance of AI in mental health care, particularly OpenAI's ChatGPT. It investigates the changing dynamics in mental health, analyzing ChatGPT's role, its benefits, drawbacks, and ethical complexities. **Purpose:** The objective is to assess ChatGPT's effectiveness in mental health, highlighting its strengths and limitations, and ethical issues. The study aims to understand how AI support can be balanced with the vital human aspect in mental health care. **Methods:** Comprehensive literature review of 7 pieces of literature from the Scopus database in 2023 (latest). **Results:** ChatGPT is found to be a useful initial mental health support tool, offering immediate access. However, it falls short in delivering the emotional depth that human health professionals provide. Key ethical concerns include data privacy and accountability. **Conclusion:** The study recommends a balanced approach, suggesting ChatGPT as an adjunct rather than a replacement for conventional mental health services. Effective use of ChatGPT in mental health care requires strict ethical guidelines and control measures to maintain the crucial human element in this field.

**Keywords:** chatGPT, mental health, artificial intelligence, ethical considerations, emotional insight

**ABSTRAK**

**Latar Belakang:** Artikel ini berfokus pada meningkatnya relevansi AI dalam layanan kesehatan mental, khususnya ChatGPT OpenAI. Laporan ini menyelidiki dinamika perubahan dalam kesehatan mental, menganalisis peran ChatGPT, manfaat, kelemahan, dan kompleksitas etikanya. **Tujuan:** Tujuannya adalah untuk menilai efektivitas ChatGPT dalam kesehatan mental, menyoroti kekuatan dan keterbatasannya, serta masalah etika. Studi ini bertujuan untuk memahami bagaimana dukungan AI dapat diseimbangkan dengan aspek vital manusia dalam perawatan kesehatan mental. **Metode:** Tinjauan pustaka yang menyeluruh terhadap 7 literatur dari database Scopus pada tahun 2023 (terbaru). **Hasil:** ChatGPT terbukti menjadi alat dukungan kesehatan mental awal yang berguna, menawarkan akses langsung. Namun, hal ini gagal dalam memberikan kedalaman emosional yang diberikan oleh para profesional kesehatan manusia. Masalah etika utama mencakup privasi dan akuntabilitas data. **Kesimpulan:** Studi ini merekomendasikan pendekatan yang seimbang, menyarankan ChatGPT sebagai tambahan dan bukan pengganti layanan kesehatan mental konvensional. Penggunaan ChatGPT yang efektif dalam perawatan kesehatan mental memerlukan pedoman etika yang ketat dan tindakan pengendalian untuk mempertahankan elemen manusia yang penting dalam bidang ini.

**Kata kunci:** chatGPT, kesehatan mental, kecerdasan buatan, pertimbangan etis, wawasan emosional

## INTRODUCTION

The advent of Artificial Intelligence (AI) marks a paradigm shift in various sectors, signifying what Klaus Schwab calls the 'Fourth Industrial Revolution' (Schwab, 2017). AI's reach extends from revolutionizing industries like automotive through autonomous vehicles to the nuanced sectors of finance and data analytics (Kaplan & Haenlein, 2019). However, its foray into the delicate sphere of mental health care has sparked a complex dialogue. OpenAI's ChatGPT stands at this intersection, embodying the potential and the challenges of AI in a field deeply rooted in human interaction (Brown et al., 2020). Proponents laud ChatGPT for its potential to democratize mental health support, providing a ubiquitous, judgment-free platform (Vaidyam et al., 2019). Yet, critics raise concerns over AI's capacity for genuine empathy, questioning if such a system can address the multifaceted emotional states of humans (Searle, 1980; Turing, 1950).

The allure of ChatGPT lies in its promise of immediacy and constant availability, a beacon of support in the pressing need for mental health care access—a domain where professional help is not always within reach (Arjanto *et al.*, 2023; Wang *et al.*, 2007). This accessibility, however, is met with trepidation regarding the depth of ChatGPT's emotional comprehension. Despite advancements in AI, the debate persists on whether these systems can truly resonate with human emotions and the subtleties involved in mental health care (Picard, 2000). Moreover, the application of AI in this field is not just a matter of technological capability but also one of profound ethical implications. Concerns about privacy, potential misuse of personal data, and the risk of diminishing human experiences to algorithmic responses loom large (Crawford & Calo, 2016). These

challenges underscore the importance of a prudent approach that balances AI's potential with the irreplaceable human elements intrinsic to mental health care (Frankish & Ramsey, 2014).

Recognizing these complexities, this paper aims to offer a thorough examination of ChatGPT's role within the dynamic terrain of mental health. It seeks to navigate through the promising advantages and the inherent limitations, all while giving due consideration to the ethical dilemmas that its use entails. The ultimate goal is to discern a balanced path that leverages the capabilities of ChatGPT as a supplemental tool, not a replacement, in mental health services, thereby advocating for the thoughtful integration of AI in a manner that upholds the nuanced demands of psychological well-being and ethical integrity.

Recent advancements in AI, particularly in natural language processing (NLP) and machine learning, have significantly impacted mental health care. Innovations like sentiment analysis, emotion recognition algorithms, and adaptive learning systems have paved the way for more responsive and intuitive AI applications (Malgaroli *et al.*, 2023; Taurah *et al.*, 2020). These developments have enabled AI tools, including ChatGPT, to provide more personalized interactions, showing a deeper understanding of user needs and emotional states. Additionally, the integration of ethical AI frameworks has begun to address concerns over privacy and data security, setting a precedent for responsible AI deployment in sensitive areas like mental health (Mohammad Amini *et al.*, 2023; Solanki *et al.*, 2023).

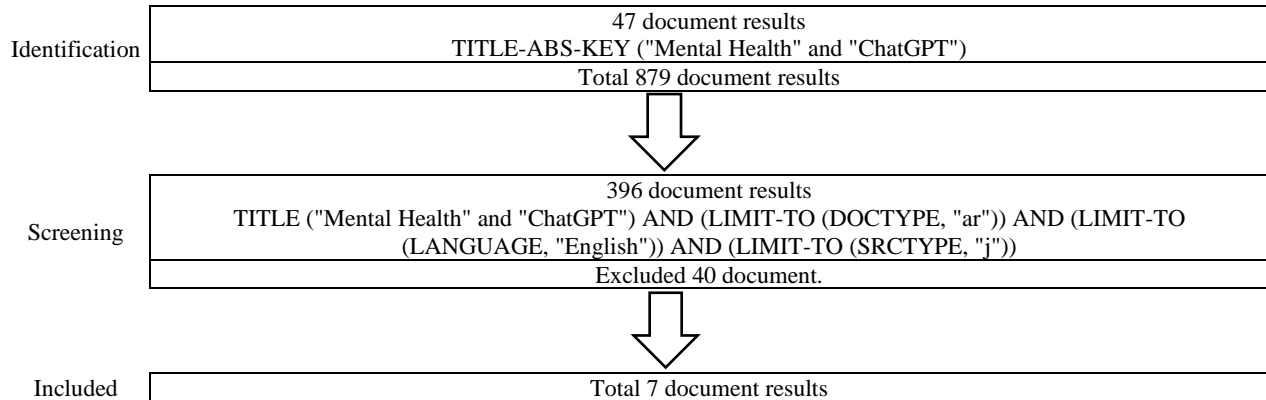
This research stands out in its comprehensive analysis of ChatGPT's application in mental health care, particularly in bridging the gap between technical prowess and ethical considerations. Unlike

prior studies that have predominantly focused on either the technological capabilities or the ethical implications separately, this paper offers an integrated approach. It scrutinizes ChatGPT's effectiveness not just as a technological tool but also through the lens of ethical, social, and psychological dimensions. This holistic perspective is novel in this domain, offering insights into how AI can be aligned with human-centric values while capitalizing on its strengths to enhance mental health services. Furthermore, the paper proposes a unique framework for the ethical use of AI in mental health, a blueprint that can guide future developments and applications in this field.

## METHOD

The research methodology for this study comprised a comprehensive literature

review, focusing on sourcing articles pertinent to the intersection of mental health and ChatGPT. Scopus, renowned for its rapid, exhaustive, and interdisciplinary literature provision, served as the primary database for article retrieval. The selection process involved stringent inclusion and exclusion criteria, primarily hinged on keyword searches centering around "Mental Health" and "ChatGPT". Inclusion criteria were set to filter articles published in 2023, ensuring they were research-oriented, fully accessible in text format, free of charge, and primarily in English. On the other hand, exclusion criteria were applied to articles not conforming to international standards or lacking full-text availability. This data includes information about authors, affiliations, article titles, abstracts, keywords, publication years, citation counts, and publication sources (De Bellis, 2009).



**Figure 1.** Data retrieval process based on The PRISMA flow diagram.

In terms of ethical considerations, this literature review did not directly involve human or animal subjects, thereby negating the need for ethical clearance typically associated with empirical studies. As such, informed consent was not a requisite component of this research methodology. The focus remained solely on the analysis and synthesis of existing literature, with a

total of seven articles meeting the established criteria and being selected for in-depth review and analysis. This approach ensures a comprehensive understanding of the current state of knowledge regarding the use of ChatGPT in mental health, adhering to rigorous academic standards and ethical research practices.

## RESULT

### ChatGPT as an Initial Source of Mental Health Aid

The potential of AI models like ChatGPT in offering rapid psychological assistance cannot be underscored enough. ChatGPT's effectiveness as a preliminary tool for individuals seeking immediate psychological counsel has been widely acknowledged (Aditama et al., 2023). It provides users an instant platform, free from waiting times typically associated with mental health professionals. Another

compelling aspect of ChatGPT is universal availability (Monteith *et al.*, 2022; Singh, 2023). Regardless of the hour or the day, ChatGPT remains accessible, making it a crucial tool especially for those undergoing crisis moments, where timely intervention is paramount. The undeniable advantage here is its non-reliance on human availability, sidestepping issues like time zones or working hours, which could impede timely support (Chagas *et al.*, 2023; Kettle & Lee, 2023).

**Table 1.** Articles from the Scopus Database

Authors	Title	Year	Source title
Haman M.; Školník M.; Šubrt T.	Leveraging ChatGPT for Human Behavior Assessment: Potential Implications for Mental Health Care	2023	Annals of Biomedical Engineering
Aminah S.; Hidayah N.; Ramli M.	Considering ChatGPT to be the first aid for young adults on mental health issues	2023	Journal of Public Health
Dell C.	Letter to the editor in response to Samuel Woodnutt, Chris Allen, Jasmine Snowden, Matt Flynn, Simon Hall, Paula Libberton, ChatGPT, Francesca Purvis paper titled: Could artificial intelligence write mental health nursing care plans?	2023	Journal of Psychiatric and Mental Health Nursing
He Y.; Liang K.; Han B.; Chi X.	A digital ally: The potential roles of ChatGPT in mental health services	2023	Asian Journal of Psychiatry
Rajaei A.	Teaching in the Age of AI/ChatGPT in Mental-Health-Related Fields	2023	Family Journal
Farhat F.	ChatGPT as a Complementary Mental Health Resource: A Boon or a Bane	2023	Annals of Biomedical Engineering
Singh O.	Artificial intelligence in the era of ChatGPT- Opportunities and challenges in mental health care	2023	Indian Journal of Psychiatry

However, while its promptness is revolutionary, ChatGPT's role should be understood as a bridge rather than a destination. While ChatGPT offers fast advice, it cannot replace the depth, expertise, and understanding provided by trained

healthcare professionals (Aditama et al., 2023; Rajaei, 2023). It states that ChatGPT serves as an initial measure people can take before seeking more comprehensive professional assistance (Dell, 2023; Monteith *et al.*, 2022).

**Table 2.** Comparison of ChatGPT with Traditional Counseling Methods

Attribute	ChatGPT	Traditional Counseling
Availability	24/7	Limited by working hours
Response Time	Immediate	Variable
Depth of Emotional Insight	Limited	Deep
Cost	Generally low/free	Variable/costly
Accessibility	Global/internet connection	Location-dependent

## Limitations in Emotional Interpretation

While AI advancements, particularly in Natural Language Processing (NLP), have been groundbreaking, there remain significant chasms in their application in mental health, specifically regarding emotional interpretation. Several studies have been conducted, extensively highlighting the shortcomings of models like ChatGPT in nuanced emotional scenarios (Elyoseph *et al.*, 2023; Koptyra *et al.*, 2023). Even with state-of-the-art algorithms and vast datasets, the mechanical nature of these models prevents them from fully understanding or empathizing with the intricate labyrinth of human emotions. Such limitations become particularly evident when individuals share deeply personal, emotionally charged narratives. While ChatGPT might provide logically correct responses, it often lacks the emotional depth or resonance that a human listener might offer (Branum & Schiavenato, 2023; Elkhatat, 2023; Huang *et al.*, 2023). This critique brings forth the inherent challenge of digitizing empathy and raises questions on whether machines can ever truly mimic the nuanced emotional intelligence that humans inherently possess (Ennab, 2023).

## Ethical and Legal Aspects

The intertwining of AI and healthcare has thrust many ethical and legal considerations to the fore. Research has been undertaken to investigate these dilemmas in depth, with particular emphasis on accountability (Amram *et al.*, 2023). If an AI model, such as ChatGPT, provides misguided advice or misinterprets a situation leading to negative outcomes, where does the responsibility lie? Such questions remain at the epicenter of the AI-healthcare debate. Conversely, some scholars argue in favor of AI's objectivity. The lack of emotional bias employed by AI can be beneficial, especially in scenarios where human healthcare

providers may harbor unconscious biases (Mittelstadt, 2019). AI operates on data-driven logic, and hence the chances of any form of prejudice, racial or gender-based, for instance, are minimal unless those biases are in the data they were trained on (Caliskan *et al.*, 2016). However, this 'objectivity' is double-edged. While it ensures unbiased responses, it also means that AI models may lack the warmth, reassurance, or understanding that a human touch can offer, especially in the delicate realm of mental health (Minerva & Giubilini, 2023).

## DISCUSSION

### Affective Value and Ethical Aspects

The nuanced and often controversial role of ChatGPT in the mental health landscape offers fertile ground for both praise and skepticism. While it is largely agreed that ChatGPT lacks the affective value that comes with human interaction, there is an interesting counterargument to consider. The absence of inherent human bias in ChatGPT may represent an unconventional form of 'epistemic justice' (Mittelstadt, 2019). In essence, this objectivity may allow for more candid dialogues, particularly for individuals who might otherwise be marginalized or stigmatized due to societal prejudices. These impersonal interactions may benefit some users by enabling clearer, more objective exchanges free from human bias or judgment (Aditama *et al.*, 2023). However, this 'objective' interaction is not without its pitfalls. The lack of ethical nuance in automated responses, particularly in sensitive matters, could be detrimental if not regulated and supervised adequately.

### The Role in Mental Health Diagnoses

While ChatGPT shows promise in bridging the initial gap between a crisis and professional help, its role must be clearly defined and limited. ChatGPT is not, and should not be considered, a diagnostic tool

for mental health issues. The potential dangers of over-reliance on AI in making important health decisions should not be overlooked (Lee *et al.*, 2021; Zhou *et al.*, 2022). ChatGPT can serve as an introductory source of information and support, encouraging users to then seek professional help for a more comprehensive understanding and treatment plan. The application of disease diagnostics must be carefully managed to reduce the risk of misdiagnosis or inappropriate treatment recommendations, which could have severe and far-reaching implications (He *et al.*, 2023; Monteith *et al.*, 2022).

### Pros and Cons

In assessing the broader role of ChatGPT in mental health, it is crucial to avoid binary evaluations that position the technology as either universally beneficial or detrimental. The usability of ChatGPT varies depending on the context, showing different levels of effectiveness based on the unique needs and circumstances of each individual user (Zhou *et al.*, 2022). The accessibility and immediacy of ChatGPT make it a compelling option for initial support (Farhat, 2023; Lee *et al.*, 2021). ChatGPT's potential to provide first aid to young adults struggling with mental health issues (Aminah *et al.*, 2023). Nevertheless, this cannot supplant the depth of human emotional intelligence nor can it bypass critical ethical considerations, such as data privacy and the potential for algorithms to diminish human experiences (Crawford & Calo, 2016). While ChatGPT presents groundbreaking opportunities for democratizing mental health support, its limitations, both ethical and functional, necessitate cautious optimism. By implementing strong guidelines and strict monitoring mechanisms, we can optimize ChatGPT's role as a supplementary tool in mental health services. This approach could allow it to form a harmonious symbiosis with

traditional healthcare methods, rather than serving as a replacement for them (Lee *et al.*, 2021). The significant potential of AI in mental health care provision (Haman *et al.*, 2023). By carefully navigating these complexities, stakeholders can work toward harnessing the best of what ChatGPT offers without overshadowing or undermining the essential human elements of mental health care.

### CONCLUSION AND SUGGESTION

As an always-available initial touchpoint for mental health support, ChatGPT offers significant benefits due to its consistent and unbiased support, but stakeholders must recognize that it does not replace the nuanced comprehension and ethical judgment of human professionals. To harness its potential responsibly, it is imperative to integrate ChatGPT into existing care pathways, establish risk assessment protocols, and train the AI on ethical issues to ensure it can flag complex scenarios to human caregivers. Users must be provided with clear guidelines on ChatGPT's capabilities, underscoring that it is not a diagnostic tool. Collaboration with mental health professionals in the development and ongoing training of ChatGPT is essential to ensure clinical and ethical alignment. Furthermore, rigorous monitoring and quality control measures should be in place, along with stringent data privacy assurances. Stakeholders should also implement feedback mechanisms, remain abreast of legal standards, and promote professional development to integrate AI tools like ChatGPT effectively into mental health practice, reinforcing it as a supplemental, ethically minded, and efficacious tool within the comprehensive mental health care framework.

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## AUTHOR CONTRIBUTION

Paul Arjanto contributed to secondary data collection and article writing. Feibry Feronika Wiwenly Senduk are responsible for writing the articles.

## CONFLICT OF INTEREST

The authors have no conflict of interest.

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