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RECEIVED 05 September 2023
ACCEPTED 28 November 2023
PUBLISHED 11 January 2024

CITATION
Pandya A, Lodha P and Ganatra A (2024) Is
ChatGPT ready to change mental healthcare?
Challenges and considerations: a
reality-check.
Front. Hum. Dyn. 5:1289255.
doi: 10.3389/fhumd.2023.1289255

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Is ChatGPT ready to change mental healthcare? Challenges and considerations: a reality-check

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As mental healthcare is highly stigmatized, digital platforms and services are becoming popular. A wide variety of exciting and futuristic applications of AI platforms are available now. One such application getting tremendous attention from users and researchers alike is Chat Generative Pre-trained Transformer (ChatGPT). ChatGPT is a powerful chatbot launched by open artificial intelligence (Open AI). ChatGPT interacts with clients conversationally, answering follow-up questions, admitting mistakes, challenging incorrect premises, and rejecting inappropriate requests. With its multifarious applications, the ethical and privacy considerations surrounding the use of these technologies in sensitive areas such as mental health should be carefully addressed to ensure user safety and wellbeing. The authors comment on the ethical challenges with ChatGPT in mental healthcare that need attention at various levels, outlining six major concerns viz., (1) accurate identification and diagnosis of mental health conditions; (2) limited understanding and misinterpretation; (3) safety, and privacy of users; (4) bias and equity; (5) lack of monitoring and regulation; and (6) gaps in evidence, and lack of educational and training curricula.

KEYWORDS

ChatGPT, ChatGPT supported chatbots, psychotherapy, ethical dilemmas, artificial intelligence

Introduction

Artificial intelligence (AI) is emerging as a potential game-changer in transforming modern healthcare including mental healthcare. AI in healthcare leverages machine learning algorithms, data analytics, and computational power to enhance various aspects of the healthcare industry (Bohr and Memarzadeh, 2020; Bajwa et al., 2021). Chat Generative Pre-trained Transformer (ChatGPT) is a powerful chatbot launched by open artificial intelligence (Open AI) (Roose, 2023) that has over 100 million users in merely 2 months, making it the fastest-growing consumer application (David, 2023).

The ChatGPT and ChatGPT-supported chatbots have the potential to offer significant benefits in the provision of mental healthcare. Some advantages of ChatGPT in mental health support is depicted in Figure 1. They include (1) improve accessibility, (2) anonymity & reduce stigma, (3) specialist referral, (4) continuity of care and long-term

support, (5) potential for scale-up and (6) data-driven insights for decision-making (Miner et al., 2019; Denecke et al., 2021; Cosco, 2023; Northwest Executive Education, 2023).

While ChatGPT-supported chatbots can provide certain benefits such as increasing accessibility to mental health support and offering a non-judgmental space for individuals to express their concerns (Denecke et al., 2021), they raise several concerns that need to be carefully addressed (Figure 2).

Table 1 offers a detailed explanation of the advantages of ChatGPT in transforming mental healthcare (Miner et al., 2019; Denecke et al., 2021; Cosco, 2023; Northwest Executive Education, 2023).

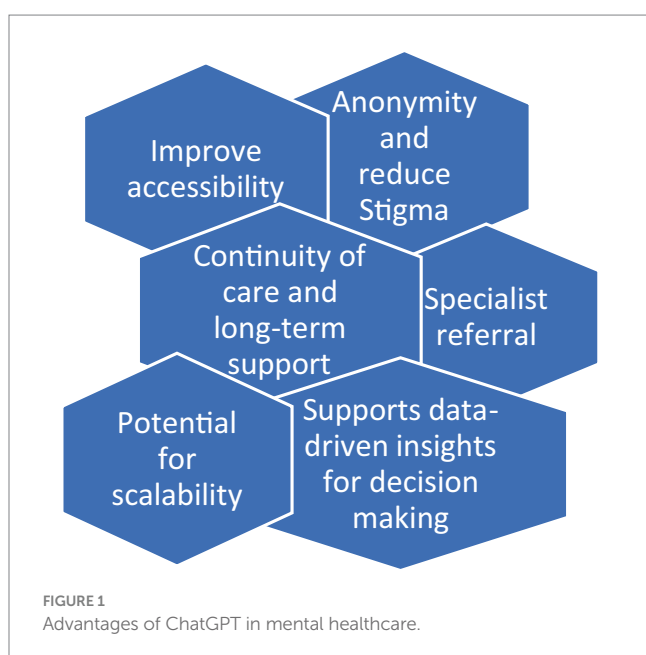
- 1 Lack of accuracy in the identification and diagnosis of mental health conditions: ChatGPT and ChatGPT-supported chatbot was not intended to address mental health needs; however, lately, ChatGPT is being used as a substitute for psychotherapy which raises numerous ethical challenges. They are not a substitute for professional mental health services, and their effectiveness depends on the quality of their design, training, and risk assessment protocols. How specifically does ChatGPT identify and address mental health concerns considering cultural and individual differences while articulating symptoms? Can it accurately diagnose mental illness or identify complex comorbid mental health conditions? Can it provide support for crisis situations? Although the chatbot is knowledgeable about mental health, the accuracy with which it can diagnose users with a specific mental health condition and provide reliable support and treatment is a major concern (David, 2023). This creates a dilemma of users being misled, misdiagnosed, and mistreated.
- 2 Limited understanding and misinterpretation: Digital mental health tools can help people feel more in control and have an all-time accessible therapist, but they pose potential risks as

well. Chatbots, even those powered by advanced AI, have limitations in understanding complex human emotions, nuanced language, and context. They may misinterpret or respond inadequately to a user's mental health concerns, potentially leading to misunderstandings or inappropriate advice. ChatGPT is trained for using web-based information and reinforcement-learning techniques with human feedback. If not equipped with credible human responses and reliable resources, they may provide inaccurate information and inappropriate advice regarding mental health conditions, potentially harmful to persons with mental health problems. A piece of recent alarming news about AI blames it for leading to the death by suicide of a Belgian man (Cosco, 2023) and other articles discuss the harm posed by ChatGPT (Kahn, 2023; Northwest Executive Education, 2023).

- 3 Safety and privacy issues: The concern regarding the confidentiality and privacy of users' data is not unknown (Northwest Executive Education, 2023). Any person engaging with an AI-based app for mental health support is bound to share personal details, making them vulnerable in situations of breach of confidentiality. Privacy is marred in the process of engaging with ChatGPT, which is combined with other concerns about confidentiality, lack of therapist disclosure, and simulated empathy that ultimately challenge users' rights and therapeutic prognosis.
- 4 Bias and inequity: Developers should be mindful of potential biases in the chatbot's algorithms or data sources as these may perpetuate systemic biases or inadvertently discriminate against certain populations. Furthermore, interacting with a mental health chatbot can evoke strong emotions and potentially trigger distressing memories or experiences for some users.

The current percentage of the population with access to the internet is 64.4% (Statista, 2023). One out of 10, a rough average, have access to conventional mental healthcare, which means that not everyone has access to mental healthcare, especially in the LMICs (Singh, 2019). Improving accessibility is another important factor to consider when determining whether ChatGPT is ready to change mental healthcare. ChatGPT should be designed to be accessible to those who may not have access to the internet. This could include making the program available to those who are located in rural or remote areas or who are unable to access conventional mental healthcare due to financial, cultural, or other barriers.

- 5 Lack of proper monitoring and regulation: Lack of proper monitoring, regulation, and the universality of applications is an important concern (Imran et al., 2023; Wang et al., 2023). It can indeed pose significant threats to the safety and wellbeing of its users. Given the diversity in digital literacy, education, language proficiency, and level of understanding among potential users across the globe, professional associations and other key stakeholders should evaluate and regulate AI-based apps for their safety, efficacy, and tolerability and provide guidance for their safe use by the general public. Indian Council of Medical Research (ICMR) (2023) outlines ethical guidelines for the application of AI in



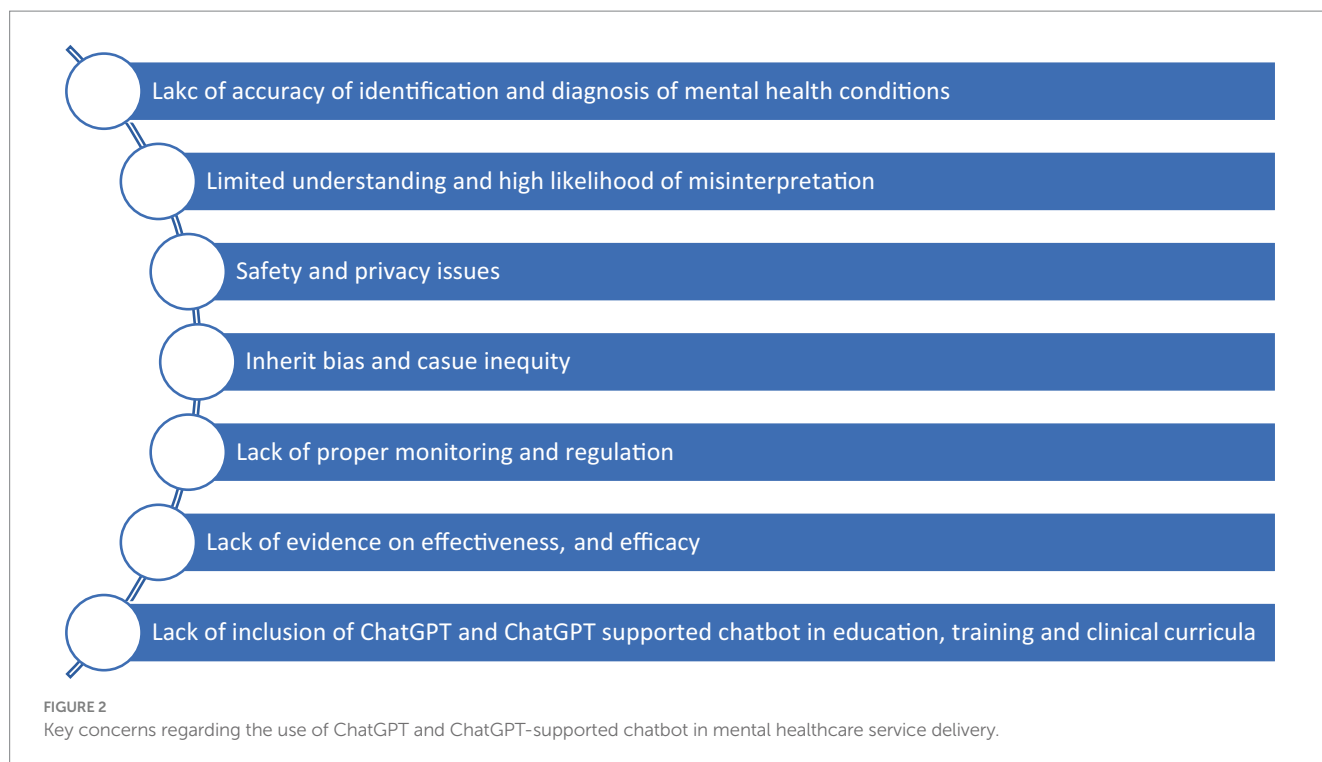


TABLE 1 Advantages of ChatGPT in transforming mental healthcare.

Advantages	Explanation
Improve accessibility (Cosco, 2023; Northwest Executive Education, 2023)	<ul style="list-style-type: none"> • Access to accurate information: chatbots can provide users with accurate information about mental health conditions, coping strategies and available resources, and help to raise awareness and reduce misconceptions • Round-the-clock availability: ChatGPT and chatbots can provide support round the clock, ensuring that individuals have access to assistance whenever they need it, even outside regular office hours • Reduced wait times: traditional mental health services often have long waiting lists. Chatbots can offer immediate assistance, reducing the wait time for individuals in crisis
Anonymity and reduce stigma (Denecke et al., 2021)	<ul style="list-style-type: none"> • Privacy: users can discuss their mental health concerns with ChatGPT-supported chatbots or ChatGPT anonymously, which can reduce the fear of judgment and stigma associated with seeking help for mental health issues • ChatGPT-supported chatbots allow users to engage with the system at their own pace, making it easier for those who may be hesitant to seek help or share their feelings with another person
Specialist referral (Miner et al., 2019; Denecke et al., 2021)	<ul style="list-style-type: none"> • Identifying risks: with robust risk assessment protocols, chatbots can identify users at risk of self-harm or experiencing a crisis and enable specialist referral for early intervention and potentially saving lives • Complementary support: ChatGPT-supported chatbots can complement human mental health professionals by providing initial assessments, information, and ongoing support and also address generic issues so that freeing up mental healthcare providers' time for more complex cases where in-person intervention is essential
Continuity of care and long-term support (Cosco, 2023)	<ul style="list-style-type: none"> • Long-term monitoring and follow-up: chatbots can maintain ongoing relationships with users, providing consistent support and monitoring of their mental health over time
Potential for scalability (Denecke et al., 2021)	<ul style="list-style-type: none"> • Handling high volume: these technologies can handle a high volume of users simultaneously, making it possible to support a larger number of individuals seeking help, especially during times of increased demand • Consistency: chatbots provide consistent responses, ensuring that users receive standardized information and support regardless of the time or day
Supports data-driven insights (Denecke et al., 2021; Northwest Executive Education, 2023)	<ul style="list-style-type: none"> • Chatbots can collect and analyze data from user interactions and offer valuable insights into trends and patterns of mental health issues. This can inform public health strategies and policy decisions

biomedical healthcare, but no such guidelines exist for mental healthcare that can allow for supervised care and intervention.

There are various competitive “open software” platforms to ChatGPT that have been launched, including Google Bard among others (Schechner, 2023). Unfortunately, this raises the concern that ChatGPT and these open software platforms can invade the privacy of user content. Countries such as Italy have blocked ChatGPT over privacy concerns (EuroNews, 2023), and realizing the many other ethical dilemmas, there is a need for the formation of a global council responsible for the accreditation and standardization of applications of AI in mental healthcare intervention. It is quintessential to ensure quality care and reserved rights of the patients globally. The program should be easy to navigate and understand so that users feel comfortable and confident when using the program.

- 6 Lack of evidence on effectiveness and efficacy: To the best of our knowledge, there are no empirical studies assessing the effectiveness and efficacy of ChatGPT and ChatGPT-supported chatbot, especially in the LMIC context. The absence of empirical studies on ChatGPT’s effectiveness and efficacy, particularly in Low- and Middle-Income Countries (LMICs), poses a significant knowledge gap (Sallam, 2023; Wang et al., 2023). The dearth of evidence on the impact of ChatGPT and ChatGPT-supported chatbots in diverse socio-cultural contexts hinders our understanding of how these AI tools perform in promoting mental health, and health equity within resource-limited settings. Closing this void through targeted research is essential to harness the potential benefits of ChatGPT in addressing public health challenges in a global context.
- 7 The use of ChatGPT and ChatGPT-supported chatbot in educational training and clinical curricula should be explored, ensuring their integration aligns with the evolving needs of learners and practitioners. Research is needed to evaluate the chatbot program’s effectiveness, impact on learners and facilitators, and to identify potential issues or areas for improvement (Cascella et al., 2023; Kooli, 2023; Xue et al., 2023). Generating evidence-based protocols for the application of chatbot for mental healthcare is urgently required. The increasing role of AI in healthcare also makes it a prerequisite to have adequate curriculum-based training and a continuing education program on AI applications to (mental) healthcare and AI-based interventions that can be accessed by all.

There is a need for mental health professionals to be trained in the use of AI in mental health practice and also research and equip them for AI-assisted therapy. The increasing role of AI in healthcare makes it a prerequisite to have adequate curriculum-based training and a continuing education program on AI applications to (mental) healthcare and AI-based interventions. The key concerns, their examples, and strategies to address concerns are shown in Table 2 (Denecke et al., 2021; Cosco, 2023; Northwest Executive Education, 2023; Sengupta, 2023; Wang et al., 2023).

Challenges in the implementation of proposed mitigation strategies

The implementation of mitigation strategies for the use of ChatGPT and ChatGPT-supported chatbots presents several challenges, ranging from technical and ethical considerations to user experience and bias mitigation. There are challenges specific to low- and middle-income countries (LMIC) such as infrastructure to support the availability of the internet, knowledge and skills to use ChatGPT and ChatGPT-supported chatbot among diverse users, training healthcare providers on integrating ChatGPT and ChatGPT-supported chatbot and so. Furthermore, users must understand the difference between AI-generated therapy and AI-guided therapy when accessing digital tools for supporting mental health. ChatGPT and ChatGPT-supported chatbot offer a low-barrier, quick access to mental health support but is limited in approach. GPT generates the next text in response without really “understanding” which may be a daunting concern in mental healthcare. Thus, the “intelligence” of the bots which is currently limited to simulated empathy and conversational style is questionable to address complex mental health and to demonstrate effective care. Thus, digital tools need to be used as a part of the “spectrum of care” rather than just as a sole measure of healthcare.

It is also important to distinguish between chatbot-enabled care and psychotherapy. Psychotherapy (therapy) is a structured intervention delivered by a trained professional. Anything that relaxes or relieves a person can be therapeutic but cannot be equated to psychotherapy. ChatGPT is therapeutic with no scientific evidence of its efficacy as a “psychotherapist.” ChatGPT has the ability to respond quickly with the “right (sounding) answers” but it is not trained to induce reflection and insights as a therapist does. ChatGPT may be able to generate psychological and medical content, but it has no role in prescribing medical advice or personalized medical prescriptions.

The impact of ChatGPT on mental health and mental healthcare service delivery is yet to be determined. Will the future behold the generation of caring bots? That will be answerable with a far superior AI-guided program, research, robust regulatory and monitoring mechanisms, and integration of human intervention with ChatGPT.

Conclusion

The integration of ChatGPT and ChatGPT-supported chatbots opens avenues for expanding mental healthcare services to a larger population. To maximize their impact, ChatGPT and ChatGPT-supported chatbots should be part of a comprehensive mental health care that includes screening, continuous care and follow-up. It is essential to train ChatGPT and ChatGPT supported chatbots for a seamless transition to human professionals for diagnosis, treatment and for providing additional resources beyond the chatbot’s capabilities.

Addressing challenges and user/provider concerns requires rigorous development processes, concurrent monitoring, regular updates, and collaboration with mental health professionals. Research is pivotal for refining ChatGPT and ChatGPT-supported chatbots,

TABLE 2 Concerns related to the use of ChatGPT and its mitigation strategies (Miner et al., 2019; Denecke et al., 2021; Imran et al., 2023; Sallam, 2023; Wang et al., 2023).

Concerns	Mitigation strategies
Accurate identification and diagnosis of mental health conditions (Denecke et al., 2021)	<ul style="list-style-type: none"> • ChatGPT can be enabled with sentiment analysis; keyword detection, response time monitoring, language patterns, behavioral cues, geolocation data, user history and profile, safety prompts to assess the immediate risk of harm, or experiencing a mental health crisis • Adequate procedures should be in place to escalate such situations to human professionals who can provide timely intervention and support • A mechanism for regular audit of ChatGPT in accurate risk assessment is also needed
Limited understanding and misinterpretation (Miner et al., 2019)	<ul style="list-style-type: none"> • Conduct regular audits of the chatbot's performance, assessing its ability to provide accurate and empathetic responses • Perform scenario-based testing to simulate various mental health situations and evaluate the chatbot's responses • Ensure transparency of the algorithms and data sources used in the chatbot's training to build trust with users
Safety and privacy (Miner et al., 2019; Imran et al., 2023)	<ul style="list-style-type: none"> • Develop ethical guidelines and standards to ensure the responsible and effective use of chatbots in the mental healthcare domain • Adhere to strict ethical guidelines, including privacy and confidentiality standards, to protect user data and maintain trust • Developers should provide clear disclaimers regarding the limitations of chatbots and encourage users to seek professional help when needed • Periodical prompts should be integrated to check on their wellbeing or ask if they need help. If a user consistently expresses distress or declines assistance, this should be flagged for further assessment • Integrate a mechanism for escalating conversations to a mental health professional when high-risk situations are detected, and users should be informed about this escalation process
Bias and equity (Denecke et al., 2021; Wang et al., 2023)	<ul style="list-style-type: none"> • It is important to address potential biases in the training data that may disproportionately affect certain populations. • Efforts should be made to ensure fairness, inclusivity, and cultural sensitivity in the design and training of the chatbot. • Chatbot vocabulary should be complemented with gender-just terminologies and sensitive to survivors of gender-based violence.
Lack of monitoring and regulation (Imran et al., 2023; Wang et al., 2023)	<ul style="list-style-type: none"> • The key stakeholders, for example, the Central Mental Health Authority or the State Mental Health Authority in India, should monitor and evaluate AI-based apps for their safety and efficacy, and provide guidance on the safe use of chatbot
Gaps in evidence and lack of educational and training curricula (Sallam, 2023; Wang et al., 2023)	<ul style="list-style-type: none"> • Robust evidence on efficacy, effectiveness, and cost-effectiveness is needed • The increasing role of AI in healthcare makes it a prerequisite to have adequate curriculum-based training (especially for mental health professionals, psychologists, and allied healthcare professionals) and a continuing education program on AI-based mental health interventions.

optimizing their integration into mental health services, and ensuring they meet the evolving needs of users and healthcare providers alike within ethical framework. Prospective research with robust methodologies can focus on assessing clinical effectiveness, efficacy, safety, and implementation challenges.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

AP: Conceptualization, Methodology, Supervision, Writing – original draft, Writing – review & editing. PL: Writing – original draft, Writing – review & editing. AG: Technical inputs, Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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