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RESEARCH ARTICLE

ChatGPT (Generated Pre-Trained Transformer) As an Adjunct to Mental Health Interventions: A Commentary

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Abstract

Objective: Mental health disorders affect one in four people worldwide, and many have limited access to care. Moreover, the World Health Organization's Special Initiative for Mental Health (2019-2023) aims to explicitly ensure access to quality and affordable care for mental health conditions in low-to-middle income countries. This commentary explores the applications of chatbots based on GPT as an adjunct to mental health interventions. There are various pharmacological and non-pharmacological procedures for treating mental disorders, including psychosocial and behavioral therapies, with Cognitive Behavioral Therapy (CBT) being the best-researched treatment style. Technological advancements are being employed to scale up the delivery of CBT psychosocial and behavioral therapies, with chatbots being a recent technical invention that can provide practical first-level support for mental disorders.

Discussion: Artificial Intelligence (AI) has been gaining attention in mental health interventions, and the advancement in Natural Language Processing (NLP) has allowed the development of Generative Pre-trained Transformers (GPT) language models that can understand natural language and produce human-like responses. Chatbots can provide low-cost and easily accessible interventions for people with mental health disorders, and GPT language models can improve the quality of these chatbots by enabling them to understand and generate human-like responses.

Conclusion: Mental illnesses are still rising, and many people have limited access to care due to a shortage of mental health professionals, high treatment costs, and other challenges. Therefore, there is a need to explore and implement new interventions, including the use of AI and chatbots, to improve mental health care access and outcomes.

Conclusion: The paper discusses the clinical implications of these findings for community service development for this vulnerable group, concluding that RAD was not uncommon among HIV/AIDS-affected children.

Keywords

Artificial Intelligence, Chatbots, ChatGPT, Mental health interventions

Introduction

Globally, nearly one billion people have suffered from mental ailments ranging from anxiety and depression to psychosis and personality disorders [1,2]. Mental diseases significantly diminish the quality of life and contribute to society and the economy of the affected individual. The collective negative impact has been quantified as a "cost" to the global economy of around USD 2.5 trillion per year, which is anticipated to increase to USD 6 trillion by 2030 [1]. The World Health Organization has emphasized the importance of mental healthcare and treatment through its Special Initiative for Mental Health (2019-2023), which aims to "ensure access to quality and affordable care for mental health conditions in 12 priority countries for an additional 100 million people" [3,4].

Numerous pharmacologic and non-pharmacologic procedures, including surgical, in-patient, out-patient, medicine, support groups, counselling, psychosocial, behavioural, and alternative therapy, are given for mental diseases. The type of intervention varies on the

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category and severity of the disease. The International Classification of Diseases (ICD) [5,6] published by the World Health Organization (WHO) and the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) [1] are formalized taxonomies for categorizing mental diseases using standardized terminology and criteria. The ICD lists 11 major categories of mental disorders, while the DSM-5 identifies 20. Anxiety and depression are the most prevalent mental disorders and are also the most prevalent among adults of working age [7,8].

Psychosocial and behavioural therapies are commonly regarded as the non-pharmaceutical gold standard for treating anxiety and depression [3,9]. Cognitive Behavioural Therapy (CBT) is the best-researched problem-focused and action-oriented style of therapy that is superior to other forms of psychotherapy and corresponds with the information-processing disposition of the human brain [10]. Increasingly, technological advancements are employed to scale up the delivery of CBT psychosocial and behavioural therapies to large cohorts of affected persons. Specifically, CBT has been evaluated in computer vs. conventional settings [11], as a mobile phone service [12], as an Internet-based service [13], as a gamified smartphone application [3], and as a smartphone-based conversational agent [14]. Conversational agents (or chatbots) are a recent technical invention that is accessible 24/7 via a smartphone, communicates with many people, and is immune to cognitive biases. In contrast to computer-aided technologies that require human skill, chatbots are online and automated, providing practical first-level support for mental diseases. In this connection, this commentary explores the applications of chatbots based on GPT in adjunct to mental health interventions.

Artificial Intelligence

An AI (Artificial Intelligence) is a software application that may simulate context-sensitive responses or a dialogue (such as a chat) with a user through messaging applications, websites, mobile apps, or the telephone. For instance, the freely accessible AI GPT-3 (Generative Pre-trained Transformer version 3) includes a chatbot interface called “ChatGPT” that was developed by the AI research and deployment business OpenAI [8]. In addition, their more potent models are not tuned for human communication interactions but rather for enhanced comprehension and responsiveness through enhanced natural language processing (NLP) and machine learning (ML) capabilities [15].

Moreover, AI models can be used for various tasks, including customer service, information retrieval, and personal help. Their APIs can be linked to multiple platforms, including websites, messaging apps, and mobile devices (Application Programming Interfaces). They can be programmed to perform simple tasks, such as answering frequently requested queries, and more advanced activities, such as delivering tailored recommendations, context-sensitive translation suggestions, and grammar corrections [16].

Artificial Intelligence (AI) has been gaining attention in mental health interventions over the last few years, and the advancement in Natural Language Processing (NLP) has allowed the development of Generative Pre-trained Transformers (GPT) language models that can understand natural language and produce human-like responses [17]. The application of these models has been researched and tested for several mental health intervention [3,11,13].

Challenges in Mental Health Interventions

Mental health disorders are rising, and many have limited access to care. According to the World Health Organization (WHO), mental disorders affect one in four people worldwide, and there is a shortage of mental health professionals [18], with a high cost of treatment [1,19]. With the advancement of AI technology, it has been suggested that chatbots can provide low-cost and easily accessible interventions for people with mental health disorders [18]. Chatbots are computer programs that simulate human conversation and can use AI and NLP to understand and respond to human language. GPT language models can improve the quality of these chatbots by enabling them to understand and generate human-like responses [3].

Advantages of Using Chatbots

One of the primary benefits of using chatbots based on GPT in mental health interventions is accessibility [20]. These chatbots can be accessed anytime and anywhere without needing a physical appointment. For example, a person with anxiety or depression can use a chatbot-based app to get support without waiting for an appointment. The chatbot can provide them with coping strategies, relaxation techniques, and other evidence-based and validated interventions by mental health professionals [21].

Using chatbots based on GPT in mental health interventions also reduces the stigma associated with mental health disorders [5,10]. Many people do not seek help for mental health issues due to the fear of being labeled or stigmatized [3]. Chatbots provide an anonymous and stigma-free environment for people to seek help. They can communicate with a chatbot without fearing being judged or labeled.

Moreover, chatbots based on GPT can also be used to improve treatment adherence [3,8,21]. Patients who receive treatment for mental health disorders may not always comply with their treatment regimen. This can result in poor outcomes and a relapse of symptoms [15]. Chatbots can be programmed to remind patients to take their medication or attend appointments. They can also support and encourage patients struggling with their treatment [17].

Table 1: Applications of ChatGPT in Mental Health Intervention.

Application	Function as a Mental Health Intervention
1. Chatbot Therapy	ChatGPTcan be programmed to simulate a conversation with a therapist or counselor, allowing individuals to discuss their mental health concerns. Chatbot therapy benefits individuals who may feel uncomfortable talking about their issues with a real person.
2. Assessment and Screening	ChatGPTcan be used to administer mental health assessments and screenings. The language model can provide individuals with screening tools to assess their depression, anxiety, and other mental health conditions.
3. Psychoeducation	ChatGPT can provide psychoeducation on various mental health issues, such as the symptoms and treatment options for anxiety, depression, or other mental health disorders. This can be particularly helpful for individuals new to mental health treatment.
4. Self-Help and Coping Strategies	ChatGPTcan be used to provide self-help and coping strategies to individuals who are struggling with mental health concerns. The language model can provide individuals with strategies for managing stress, relaxation techniques, and other coping mechanisms.
5. Reminders and Motivation	ChatGPTcan be used to send reminders and motivational messages to individuals who are undergoing mental health treatment. This can help encourage individuals to stay engaged in their treatment and give them a sense of accountability.

Another potential application of chatbots based on GPT is the collection of data. These chatbots can collect data about a patient's symptoms, behaviors, and responses to interventions [18,20]. This data can be used to improve treatment plans, identify trends in symptoms, and develop more effective interventions. Machine learning algorithms can analyze this data and provide insights into the effectiveness of interventions and areas for improvement (Table 1).

Disadvantages of Using Chatbots

Despite the potential benefits of using chatbots based on GPT in mental health interventions, some limitations exist. One of the primary limitations is the lack of emotional intelligence in chatbots [3,8,16]. These chatbots can generate human-like responses but cannot read emotions like a human therapist. This can limit their ability to provide empathy and support to patients experiencing strong emotions.

Another limitation is the lack of customization [20,21]. Chatbots are programmed to respond to specific prompts and questions. They cannot adjust their responses based on the patient's unique needs or circumstances. This can limit their effectiveness in providing personalized interventions.

Privacy and security concerns are also a limitation [3,16,18]. Chatbots based on GPT collect sensitive information about patients, including their mental health history and symptoms. There is a risk that this information could be hacked or shared without the patient's consent.

Conclusion

ChatGPT can be an effective adjunct to mental health interventions. It can provide individuals with personalized mental health support, psychoeducation, self-help, coping strategies, reminders, and motivation. However, it is essential to note that ChatGPT should not be used as a substitute for professional mental health treatment but as a complementary tool to enhance mental health interventions.

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Conflicts of Interest

The author declares no conflicts of interest.

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