Chapter 2
Revolutionizing Mental Healthcare Through Artificial Intelligence

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ABSTRACT

Artificial intelligence (AI) offers significant potential for enhancing mental healthcare. Its ability to detect patterns in vast datasets can reveal insights into risk factors and symptoms, aiding the creation of tailored treatment plans. As an emerging research field, AI faces numerous challenges, particularly in its practical application. AI tools provide additional support for therapy and patient interaction. However, they cannot substitute the expertise of mental health professionals. AI's role in crisis intervention is promising but requires extensive validation to confirm its reliability and effectiveness. The ethical considerations of AI in mental health are complex, demanding careful scrutiny of its impact. This chapter examines AI's intersection with mental health, evaluating AI's practical efficacy and the ethical concerns it raises. The discussion presents a comprehensive perspective on mental healthcare's future, highlighting AI's potential benefits and the critical need to navigate its intricate challenges and limitations for psychological health.

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INTRODUCTION

Artificial Intelligence (AI) has been explored in several fields such as administration, security, environmental management, research, education, healthcare, and commerce, because to its ability to improve efficiency and results (Karimian et al., 2022). Advancements in digital data and computational capabilities in healthcare are enabling the use of artificial intelligence (AI) to assist with many activities, including disease detection, decision-making, personalised therapy, research, drugs development, administrative streamlining, and reducing health inequities (Bak et al., 2022; Lee & Yoon, 2021).

In 2019, the World Health Organisation (WHO) said that around one in eight people worldwide had a mental disorder, with anxiety and depression being the prevailing conditions. The COVID-19 pandemic worsened these circumstances, with forecasts indicating a 26% surge in anxiety and a 28% escalation in severe depressive disorders over a span of one year (World Mental Health Report, 2022). The pandemic has underscored the pressing need for inventive remedies to tackle growing disparity in mental healthcare (World Health Organization, 2022b). Researchers propose the incorporation of digital technologies into mental health services, arguing that combining evidence-based policies and decision-support systems with conventional treatment might create a powerful hybrid model. This technique is corroborated by other research (Adiukwu et al., 2020; Gavin et al., 2020; Halms et al., 2022; Li, 2023; Peng et al., 2020; Prescott et al., 2022; SAMHSA, 2022).

Psychotherapy is a fundamental approach to addressing mental health problems. It utilises several methods, such as cognitive-behavioral therapy or psychodynamic therapy, which may be administered in person or online. Nevertheless, the extent of its influence is often constrained by variables such as social disapproval, expenses, and availability. Artificial intelligence (AI) offers novel approaches to tackle these difficulties by offering customised, flexible, and adjustable remedies (Panesar & Panesar, 2021). Chatbots, digital phenotyping, and precision medicine are capable of customising treatments to suit individual requirements.

Global concerns arise from mental health illnesses, including issues such as insufficient resources and stigma. Digital health technologies provide supportive, preventative, and therapeutic solutions that may help reduce the medical and social effects of mental health conditions (Wies et al., 2021). This chapter investigates the impact of artificial intelligence (AI) on the transformation of mental health treatment. It examines the present uses of AI, assesses their usefulness and practicality, and discusses the ethical considerations associated with their implementation.

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