

Artificial Intelligence in Mental Health: A Narrative Review



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Introduction

Zhou, Zhao, and Zhang (2022) presented an overview of how artificial intelligence is applied in psychological diagnosis and interventions, highlighting its growing role in modern mental health care. The article explains that AI technologies, including machine learning, natural language processing and deep learning, are increasingly used to detect, assess, and treat mental health conditions. These tools can analyze large datasets—such as speech, facial expressions, behavior patterns, and clinical records—to improve early diagnosis, personalize

treatment plans, and monitor patient progress in real time. The authors emphasize the effectiveness of AI in supporting psychological therapies, such as delivering guided interventions, predicting treatment outcomes, and providing accessible support outside traditional clinical settings. However, the review also acknowledges major limitations and challenges, including data quality issues, ethical concerns, and the need for clinical validation before widespread implementation. Overall, the study concludes that AI offers promising opportunities to enhance psychological care, but requires responsible integration to ensure safety, accuracy, and patient trust.

In addition, Orrù, Cuccarini, Moro, and Turchi (2024) explored how artificial intelligence can support mental health practitioners in enhancing the clinical decision-making process and monitoring psychological change. The article explains that AI tools can help identify relevant clinical questions, detect patterns in patient behavior, and analyze therapeutic progress in real time, allowing for more personalized and adaptive interventions. By integrating AI systems into therapeutic practice, clinicians can receive data-driven insights, track symptom evolution, and adjust treatment strategies more efficiently. The authors highlight the potential of AI to improve the accuracy, speed, and consistency of clinical evaluations while reducing the cognitive load on practitioners. At the same time, they stress the importance of maintaining the human dimension of therapy, ensuring that AI remains a supportive tool rather than a replacement for professional judgment. Ethical considerations—such as privacy, transparency, and accountability—are also emphasized as essential for safe implementation. Overall, the study concludes that AI can strengthen clinical effectiveness when carefully integrated into therapeutic practice.

Besides, in a recent study, Spytka (2025) reported how artificial intelligence is transforming psychotherapy through the creation of therapeutic systems designed to support both patients and clinicians. The article explains

that AI technologies can personalize therapy by analyzing patient behavior, emotions, and language to offer tailored interventions, track psychological progress, and assist in decision-making during treatment. These systems can also provide continuous support beyond clinical sessions, increasing accessibility to mental health care. The review highlights practical applications such as virtual therapeutic assistants, emotion recognition tools, and automated feedback mechanisms. However, the author also stresses the need for ethical guidelines, data protection and clinical validation to ensure safety and effectiveness. Overall, the study emphasizes that AI should enhance—not replace—human therapists, paving the way for more adaptive, efficient, and accessible mental health care. In a nutshell, this minireview is an update on the current status of AI in mental health for the last 5 years.

Demographics of AI Use in Mental Health

Across studies exploring AI applications in mental health, researchers examined a wide range of participant groups, revealing the broad relevance of digital interventions. These populations include anonymous global users seeking support through chatbots, older adults in community settings, college and middle-school students, adolescents from twin cohorts, and individuals affected by specific circumstances such as the COVID-19 pandemic or cancer survival. Additional studies analyzed cross-cultural chatbot interactions, emotion-recognition models, VR-based interventions, and ancient practice-inspired programs (c). Collectively, this diversity shows that AI-driven mental health tools are being tested across ages, cultures, and contexts, emphasizing the need for interventions tailored to the unique characteristics of each demographic.

Acceptancy of AI in Mental Health

Across diverse mental health settings, AI-based tools showed strong overall acceptability and promising potential. Studies report high user engagement with AI chatbots for depression, effective support for college and student populations, and positive results from advanced emotion-recognition models and AI-driven intervention plans. Large-scale platforms with global reach and open-access health databases further demonstrate widespread adoption and trust in AI for mental health monitoring (d). While ethical considerations—such as bias and

inequality—remain important, research indicates that tools like wearables and non-invasive AI systems are generally well-received. Taken together, these findings suggest that AI is broadly accepted and effective across different populations and applications in mental health care.

Application of AI in Mental Health

Research across multiple studies showed that AI is being applied in a wide range of mental health contexts, from education to clinical care and public health. AI tools have been used to reduce anxiety and depression among students, improve emotion recognition through advanced models, and support population-level assessments such as psychiatric evaluations, CBT delivery, and adherence tracking (e). Beyond treatment, AI also contributes to prevention and early detection by analyzing wearable device data to identify stress and anxiety in real time. In healthcare settings, AI enhances clinical decision-making, streamlines documentation, and personalizes mental health interventions based on user needs (f). Overall, these studies illustrate AI's broad role in mental health—offering real-time monitoring, predictive insights, personalized support, and increased access to care.

Effectiveness of AI in Mental Health

Across the reviewed studies, AI consistently demonstrated strong effectiveness in enhancing mental health assessment, monitoring, and intervention. Digital tools such as the Wysa app show measurable improvements in depressive symptoms, while deep learning and attention-based models significantly boost emotion recognition accuracy. AI also supports real-time psychiatric assessment, personalized therapeutic delivery, and large-scale mental health screening, enabling earlier detection and tailored support. Overall, the findings highlight AI's broad value across prevention, diagnosis, and treatment, reinforcing its potential to expand access, improve care quality, and streamline mental health services on a larger scale.

Comparison Between Artificial Intelligence & Traditional Technique in Psychology

Sufyan, Fadhel, Alkathami, and Mukhadi (2024) presented a preliminary comparative study examining differences between artificial intelligence models and

human psychologists in the domain of social intelligence. The article evaluates how well AI systems can understand, interpret, and respond to emotional and social cues compared to trained professionals. Findings reveal that while AI demonstrates strong performance in pattern recognition, information processing, and emotional labeling, it lacks the depth of human empathy, contextual understanding, and nuanced judgment that psychologists apply in real-world interactions. The study highlights that AI can provide fast, objective analyses and support professionals in areas like initial assessments or monitoring emotional states. However, its limitations in interpreting complex emotions, handling ethical dilemmas, and building therapeutic alliances remain significant. The authors conclude that AI has promising potential as a complementary tool, but cannot replace human psychologists, emphasizing the importance of integrating technological precision with human emotional intelligence in clinical practice (6).

On the other hand, Kabrel (2025) examined the conditions under which AI psychotherapy could be considered comparable to human-delivered psychotherapy, proposing a set of key criteria for meaningful evaluation. The article emphasizes that AI systems must demonstrate clinical effectiveness, ethical reliability, and therapeutic safety to approach equivalence with human therapists. This includes the ability to deliver structured interventions, adapt to patient needs, ensure continuity of care, and maintain therapeutic engagement. Kabrel highlights that comparability should not only rely on symptom reduction but also on emotional attunement, therapeutic alliance, and patient satisfaction. The study discusses potential advantages of AI—such as accessibility, scalability, and consistency—but also underscores critical limitations, including lack of true empathy, ethical accountability challenges, and the risk of oversimplifying complex psychological dynamics. The author concludes that AI psychotherapy can support and complement human therapy but achieving full comparability requires rigorous clinical validation, transparent regulatory frameworks, and ongoing human oversight.

Role of Machine Learning (ML) in Therapy

Lewanowicz, Wiśniewski, and Oronowicz-Jaśkowiak (2022) analyzed the role of machine learning (ML) in supporting therapeutic processes, focusing on its advantages and limitations in clinical psychology. The article explains that ML techniques can process and

learn from complex psychological data, enabling more precise diagnoses, personalized treatment plans, and early detection of mental health disorders. These technologies can also assist therapists in identifying subtle patterns in patient behavior and therapy progress that might be overlooked in traditional settings, improving overall therapeutic effectiveness. However, the authors underline several weaknesses and risks, such as algorithmic bias, limited interpretability of models, dependence on data quality, and potential ethical concerns related to privacy and informed consent. They also emphasize the risk of overreliance on automated systems, which cannot replicate the human elements of empathy and therapeutic alliance. The study concludes that while ML offers valuable support tools for mental health professionals, it should be used as a complementary aid within a well-regulated and ethically guided therapeutic framework.

Moreover, another recent systematic review in 2025 by Dehbozorgi et al. examined how artificial intelligence (AI) is being applied in mental health care—particularly in diagnosis, monitoring, and intervention. They find that AI tools such as predictive models and chatbots can help detect and classify mental disorders, estimate risk and prognosis, monitor treatment response over time, and even deliver therapeutic support in scalable ways. However, they also highlight major challenges: issues of data quality and representativeness, privacy and security concerns, algorithm transparency, and the need for rigorous methodology and ethical oversight. The authors argue that while AI has strong potential to transform mental health care, especially in early detection and personalized support, careful implementation with attention to ethical, technical, and clinical constraints is essential for its responsible integration.

Generative Artificial Intelligence

Kolding et al. (2024) conducted a systematic review examining how generative artificial intelligence (AI) is being applied in psychiatry and mental health care. The study found that generative AI tools—especially large language models—are increasingly explored for clinical support, including tasks like symptom screening, triage, psychoeducation, therapeutic conversations, and documentation assistance. While early findings suggest promising potential to enhance accessibility and reduce clinician workload, the review also highlights critical concerns regarding ethical use, patient safety, data privacy,



and the lack of robust clinical trials validating effectiveness. The authors conclude that generative AI should currently be considered a complementary tool to support—not replace—mental health professionals, and emphasize the urgent need for regulation, transparency, and rigorous research to ensure safe and responsible integration into psychiatric practice.

Contribution of Artificial Intelligence Art Therapies

Luo et al. (2024) conducted a systematic review on the growing field of Artificial Intelligence Art Therapies (AIATs) and their role in mental health care. The article explains that AIATs integrate artistic expression with advanced AI technologies—such as image generation, emotion recognition, and interactive platforms—to support psychological healing and emotional regulation. These therapies have shown potential benefits in reducing anxiety, depression, and stress, as well as enhancing self-expression and emotional awareness. The review highlights how AI can personalize art therapy sessions by adapting to users' emotional states and creative outputs in real time, making therapy more accessible and engaging.

It also identifies important challenges, including ethical considerations, data privacy, clinical validation, and the need for trained professionals to supervise AI-assisted interventions. Overall, the study concludes that AIATs represent a promising complement to traditional therapy methods, offering innovative pathways to support mental well-being.

Online Digital Mental Health Technologies

Torous et al. (2025) provided a comprehensive overview of the rapidly evolving field of digital mental health, focusing on three major technologies: smartphone applications, generative artificial intelligence (AI), and virtual reality (VR). The article reviews current evidence on the effectiveness of these tools for mental health assessment, prevention, and treatment, showing that many digital interventions can improve accessibility, support self-management, and complement traditional clinical care. Smartphone apps have demonstrated potential in symptom tracking and early intervention, AI models show promise in personalizing care and delivering scalable psychological support, and VR environments enable immersive therapeutic experiences, particularly

for anxiety and trauma-related disorders. However, the authors also highlight critical implementation challenges, including lack of regulatory standards, inconsistent clinical validation, privacy concerns, and limited long-term engagement. They emphasize that successful integration of digital tools requires evidence-based development, strong ethical frameworks, and collaboration between clinicians, researchers, and technology developers. Overall, the study concludes that digital mental health offers powerful opportunities to enhance psychiatric care, but must be carefully governed to ensure safety, effectiveness, and equity.

Online Psychotherapy

Stephenson et al. (2025) evaluated an AI-powered online psychotherapy initiative designed to improve access and efficiency in an outpatient psychiatric setting. The study examines how integrating AI into psychotherapy delivery can help reduce wait times, streamline patient intake, and expand therapeutic reach to underserved populations. The AI system was used to support initial assessments, provide structured online interventions, and monitor patient progress, allowing clinicians to focus more on complex cases. Results showed significant improvements in service accessibility, faster treatment initiation, and greater efficiency in resource use without compromising clinical outcomes. The authors also highlight positive patient engagement and cost-effectiveness, while noting challenges related to ethical oversight, data security, and the need for clinician involvement to ensure quality of care. Overall, the study concludes that AI-assisted psychotherapy can be a valuable tool to enhance mental health service delivery, provided it is implemented within a supervised, ethical, and patient-centered framework.

Online Therapeutic Tools

Wang et al. (2025) conducted a study using machine learning to identify predictors of treatment response in patients with first-episode, drug-naïve schizophrenia over an 8-week period of antipsychotic therapy. The researchers analyzed a range of clinical, demographic, and neurocognitive variables to determine which factors most strongly predicted positive outcomes. Their models revealed that baseline neurocognitive functioning was the most significant predictor of treatment response, outperforming other clinical measures. Patients with better

cognitive performance at the start of treatment were more likely to show faster and stronger symptom improvement. The study underscores the potential of AI-driven predictive modeling to support personalized treatment planning and early intervention strategies in psychiatry. The authors also highlight the importance of integrating neurocognitive assessment into clinical decision-making to optimize therapeutic outcomes for individuals with schizophrenia.

Conclusion

Artificial intelligence is redefining clinical psychology by introducing innovative methods for diagnosis, intervention, and patient engagement. It offers clear benefits: faster data analysis, early detection of mental disorders, personalized therapeutic planning, and expanded access to care. Digital platforms, predictive models, and AI-assisted psychotherapy systems collectively enhance the reach and efficiency of mental health services.

However, these technological advantages must be balanced against notable drawbacks. AI cannot replicate the empathy, intuition, and human connection central to therapeutic relationships. Risks involving data privacy, bias, and ethical responsibility highlight the need for strong oversight and transparency. Without proper regulation and professional guidance, AI could compromise rather than enhance psychological care. Thus, AI is reshaping mental health care by improving diagnosis and treatment, making support more personalized, efficient and accessible while raising concerns about keeping the human touch in therapy. Therefore, the future of AI in clinical psychology should focus on integration rather than replacement. AI should serve as a partner to clinicians, assisting in evidence-based decision-making and extending access to underserved populations, while preserving the essential human qualities of compassion and emotional understanding. With ethical safeguards, multidisciplinary collaboration, and ongoing research, artificial intelligence can become a transformative ally in promoting mental health and improving the quality of psychological care.

In brief, this review shows how the professionals in mental health have been increasingly integrating generative AI in their daily operations and practice and they are, or should be, weighing the risks, costs, and complications along the way. AI is a genie we cannot put back in the bottle, for now, the best we can do is to try to understand what is happening and create a better use of it in our practice.

The advertisement features a background image of a middle-aged male doctor with a beard, wearing a white lab coat and a blue stethoscope. In the foreground, there is a semi-transparent graphic with the following elements:

- Cumberland** logo at the top.
- Medical Insurance** in large white text.
- A calendar icon showing **365 1/4 DAYS**.
- Three insurance plan options: **Platinum** (dark blue), **Vital** (orange), and **Basic** (teal).
- A testimonial: **Cumberland Insurance offers faster approvals, wider coverage, and personalized care so your health is always in good hands.**