



INTERNATIONAL JOURNAL OF EDUCATION AND ECONOMIC SCIENCES (IJEES)

ARTIFICIAL INTELLIGENCE IN MENTAL HEALTH PRACTICE: A SYSTEMATIC REVIEW OF APPLICATIONS AND RELATIONAL IMPLICATIONS

Mujahidin Hasanul Bisri¹   | Mira Mareta² 

¹ Faculty of Social Sciences, University Sultan Zainal Abidin, Malaysia; ²Faculty of Da'wah and Communication Studies, State Islamic University of Mataram

*Corresponding author: mujahidin25121994@gmail.com

Received: 22 September 2025 • Accepted: 28 September 2025 • Published: 30 September 2025

Abstract

This study presents a systematic literature review (SLR) following PRISMA guidelines to examine the integration of artificial intelligence (AI) in mental health practice, with a specific focus on its impact on therapeutic relationships, professional roles, and clients' perceptions of empathy. A comprehensive search in Scopus using predefined keywords yielded 229 records, of which nine empirical studies met the eligibility criteria for synthesis. Findings reveal that AI applications, including empathic chatbots, therapist, client matching algorithms, machine learning-based telepsychotherapy, and digital monitoring tools, offer promising opportunities to expand access and provide emotional support. Evidence indicates that AI can convey signals of empathy and support therapeutic processes, yet its relational quality remains limited compared to human-mediated interactions. Professionals expressed ambivalence, viewing AI as both a facilitator of efficiency and a potential threat to autonomy and clinical integrity. From the client perspective, AI systems were generally perceived as helpful and non-judgmental, though insufficient in managing complex cases such as suicide risk. Interpreted through the Technology Acceptance Model (TAM), adoption of AI is shaped by perceived usefulness and ease of use, underscoring the need for ethical safeguards, professional training, and responsible integration. Overall, AI should be positioned as a complementary tool that enhances rather than replaces human therapeutic practice.

Keywords: artificial intelligence, mental health, therapeutic, empathy, professional roles.

How to cite: Bisri, H. M., Mareta, M. (2025). Artificial Intelligence in Mental Health Practice: A Systematic Review of Application and Relational Complication. *International Journal of Education and Economic Sciences (IJEES)*, 1(3), 1-15

1 Introduction

The landscape of mental health services is undergoing a fundamental and accelerated digital transformation. In recent years, particularly driven by the global pandemic, there has been an exponential increase in the use of technology to provide psychological support (Torous et al., 2020). Services that were once limited to face-to-face

counseling sessions are now accessible through various digital platforms, ranging from video-based teletherapy, AI-powered chatbots for initial interventions, to mental health apps offering guided meditation and mood tracking (Chung & Jang, 2025). This phenomenon is no longer a marginal trend but has become an integral component of the modern mental health ecosystem. This shift promises to increase accessibility, affordability, and the destigmatization of psychological assistance for a broader population across geographic and socio-economic boundaries (Bond et al., 2023; Galatzer-Levy et al., 2023).

One of the most prominent innovations in this context is the integration of AI in mental health services, particularly through chatbots such as Woebot, Wysa, and Tess. Studies have shown that these chatbots are effective in providing early-stage emotional support and cognitive-behavioral coping strategies to users (Fitzpatrick et al., 2017; Manimozhiyan et al., 2025). However, concerns have also been raised that advances in AI may shift the role of human therapists in the counseling process, particularly in the initial stages involving empathy and emotional validation. Some studies indicate that clients can experience emotional connectedness with chatbots (Inkster et al., 2018; Lopes et al., 2024), yet such relationships are often superficial and raise questions regarding the authenticity of the therapeutic bond as well as the risk of overreliance on non-human systems (Boucher et al., 2021; Lopes et al., 2024; Manimozhiyan et al., 2025).

Criticism of AI in therapeutic contexts also includes issues of ethics, trust, and empathy. While AI can be trained to recognize and respond to emotions using natural language processing, it still lacks genuine human affective experience, making its empathic responses potentially superficial (Inzlicht et al., 2024; S. Li et al., 2023). This raises serious questions about how clients perceive empathy in interactions with automated systems and whether such relationships can support the deep psychological change processes associated with therapy. In clinical psychology literature, the therapeutic relationship is understood to encompass three core components: emotional bond, goal agreement, and task collaboration (Bordin, 1979). Empathy, as part of this bond, is regarded as a key driver of psychological change. Thus, the ability of technology, particularly AI, to replicate or sustain these elements becomes a central question in evaluating the effectiveness of technology-based interventions.

Although previous literature reviews have examined the effectiveness of digital technologies from the user perspective (Harith et al., 2022; Lattie et al., 2019; Philippe et al., 2022; Shahsavar & Choudhury, 2025), few have specifically addressed the impact of AI on the therapeutic relationship, the redefinition of professional roles, and clients' perceptions of empathy. Yet, deeper insights into these aspects are critical to ensuring that technology in mental health services is not only efficient but also ethical and human-centered.

To understand this adaptive dynamic, several concepts and theoretical frameworks are highly relevant. Digital competence in the context of professional counseling encompasses technical proficiency as well as the ability to evaluate technology. Sabella et al. (2010) emphasized the importance of a deep understanding of privacy, security, ethics, and legal regulations in online practice. This competence also includes adapting the therapeutic alliance to remain effective in digital mediums, as discussed by Ristianti et al. (2025). Moreover, the Technology Acceptance Model (TAM) provides a powerful analytical lens. Introduced by Davis (1989), TAM posits that an individual's intention to adopt a new technology is strongly influenced by two perceptions: *perceived usefulness* and *perceived ease of use*. In this context, the willingness of a mental health professional to adopt teletherapy may depend on the extent to which they believe the technology improves therapeutic outcomes for clients and the ease with which it can be operated without significant technical barriers.

Addressing this gap, this systematic literature review aims to critically synthesize and analyze existing empirical studies. Specifically, this review seeks to answer the following research questions:

1. What are the forms and characteristics of AI implementation in mental health services?

2. What is the impact of AI use on the dimensions of the therapeutic relationship, including clients' perceptions of empathy?
3. How does the integration of AI reshape the roles of mental health professionals within technology-based services?

2 Research Method

This study uses a *systematic literature review* (SLR) approach with reference to the PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*) guidelines to ensure that the process of searching, selection, and synthesis of literature is carried out in a systematic, transparent, and replicable manner. The design of this study aims to synthesize the latest empirical evidence on the form of application of artificial intelligence (AI) in mental health services, as well as its impact on therapeutic relationships, the professional role of humans, and the perception of empathy by clients.

2.1 Eligibility Criteria

Articles included in this review must meet some established eligibility criteria. First, the types of studies reviewed are limited to scientific articles that use primary data, either through quantitative, qualitative, or mixed approaches. Secondly, only articles written in English are included in the analysis, to ensure quality and ease of accessibility. Third, the time span of publication is limited between 2017 to 2025, given that the adoption of artificial intelligence in mental health services has significantly begun to grow since those years, especially in the context of the digitization of therapeutic relationships, professional roles, and client perceptions of empathy. The exclusion criteria include articles that do not go through the peer-review process, non-scientific reports such as opinion or editorial articles, and studies that are not directly relevant to the focus of the study, namely the relationship between AI and relational and professional aspects in mental health services.

2.2 Information Sources

The main electronic database used for literature search is **Scopus**. The selection of Scopus is based on its reputation as one of the largest and most credible multidisciplinary databases that includes internationally reputable and *peer-reviewed journals*. With its extensive coverage and systematic indexation, Scopus provides easy access to up-to-date and relevant publications in the fields of psychology, health technology, and professional education.

2.3 Search Strategy

The search strategy was developed using a search string designed to capture studies that address the integration of smart technologies in counseling services. The initial search strings used are:

("Artificial Intelligence" OR "AI" OR "Chatbot" OR "Machine Learning") AND ("Mental Health" OR "Psychotherapy" OR "Counseling") AND ("Therapeutic Relationship" OR "Empathy" OR "Professional Role"). These strings are then tested in the Scopus database and refined through an iterative process to improve the precision and relevance of the search results. Adjustments are made by adding *boolean operators*, *synonyms*, and *controlled vocabulary* based on the *subject headings* that appear in the initial results, to include a variety of terminologies used in the related literature.

2.4 Study Selection Process

The selection stage is carried out systematically to ensure that only studies relevant to the research topic are included in the review. The first step begins with the removal of duplicates based on the identification of similarities in the title, author's name, and year of publication. Articles identified as copies are immediately removed from the list. Next, a screening of the title and abstract was carried out to assess the initial relevance. Articles are eliminated at this stage if they are found to be inappropriate for the main topic, such as studies that do not address the implementation of artificial intelligence in the context of mental health services, or do not touch on aspects of

therapeutic relationships, the professional role of human beings, or the perception of empathy in counseling practice. Articles that are not written in English or not published in peer-reviewed journals are also excluded.

Studies that passed the initial screening stage were then analyzed in more depth through reading the full text. The evaluation at this stage is focused on the suitability of the methodology, the depth of discussion related to the application of AI in mental health practice, and the relevance of the findings to the dimension of therapeutic relationships. Only articles with clear reporting and strong empirical contributions to the research topic are included in the final synthesis. The selection process is carried out by two independent reviewers who work separately. If there is a difference of opinion in determining the inclusion or exclusion of an article, then a discussion is held to reach an agreement. If consensus is not reached, a third reviewer with a background in psychology and educational technology is involved to provide the final decision. Through this stage, a total of 9 articles were obtained that met all eligibility criteria and were declared worthy of further analysis in this systematic review.

2.5 Data Extraction Process

From each selected article, data is systematically extracted using a standard format. The information collected includes the author's name, year of publication, research objectives, methodology used, as well as key findings relevant to the focus of the study. Extraction is done manually with cross-examination by two reviewers to guarantee accuracy.

2.6 Data Synthesis

Data synthesis is carried out through a thematic analysis approach. The findings of each study are categorized into main themes that are in accordance with the focus of the study, namely (1) the form of application of AI in mental health services, (2) the impact on therapeutic relationships, (3) shifts or redefinitions of human professional roles, and (4) clients' perceptions of empathy and relationship authenticity. This approach allows for an in-depth analysis of the patterns of findings in various study contexts, while identifying gaps and further directions of research.

3. Result

3.1 Study Selection

An initial search conducted through the Scopus database using a predefined search string yielded 229 articles. After applying filters based on the year of publication (2017–2026), the field of science (*subject area* of Psychology and Social Sciences), the type of document (article), and language (English), the number of articles was reduced to 35. Next, title and abstract screening was carried out to assess the relevance of the article to the focus of the research. At this stage, a total of 25 articles were eliminated because they did not discuss the implementation of artificial intelligence in mental health services or did not mention relational and professional aspects (therapeutic relationships, professional roles, or empathy). Thus, 10 articles remain for the feasibility assessment stage through the reading of the full text.

At the title and abstract screening stage, a total of 25 articles were eliminated. The main reasons are: (1) focus on the technical aspects of developing AI algorithms or technologies without the context of mental health services, (2) discussing mental health but not involving AI integration, (3) opinion-based, editorial, or non-empirical literature studies, and (4) research that highlights general mental health aspects (e.g. depression or anxiety) but does not mention therapeutic relationships, professional roles, or empathy.

At the full-text review stage, one article was excluded because it only emphasized the design and *usability aspects of the technology*, without exploring the relational or professional dimensions in AI-based counseling practices. The complete flow of the selection process in this study is depicted in the PRISMA diagram (Figure 1)

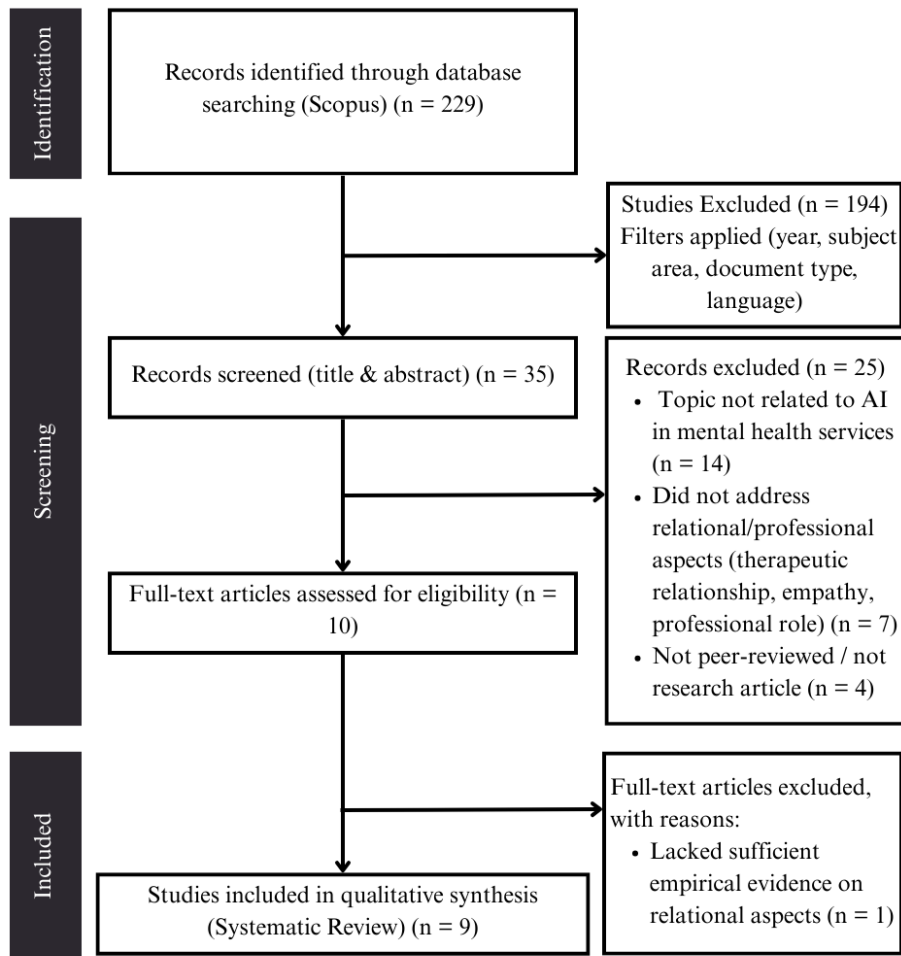


Figure 1. PRISMA diagram of the process of identification, screening and selection of studies.

Author & Year	Title	Participants	Study Aim	Methodology	Name of Artificial Intelligence	Type of Artificial Intelligence	Key Finding
(X. Li, 2023)	Evaluation and Analysis of Elderly Mental Health Based on Artificial Intelligence	Dataset: JAFFE (10 Japanese females, 213 images), KDEF (70 individuals, 980 images), RaFD (67 models, 469 images)	To develop an efficient facial expression recognition (FER) system that improves accuracy over existing models.	Hybrid model combining Convolutional Neural Network (CNN) and Deep Belief Network (DBN); evaluation with cross-validation on three benchmark datasets	Hybrid CNN–DBN model with SVM classifier	Deep Learning (CNN, DBN, SVM)	The proposed model outperformed existing FER models across JAFFE, KDEF, and RaFD datasets, achieving up to 98.8% accuracy , showing robustness and generalizability
Inkster et al., 2018	An Empathy-Driven, Conversational Artificial Intelligence Agent (Wysa) for Digital Mental Well-Being: Real-World Data Evaluation Mixed-Methods Study	12,000+ real-world users (quantitative app data) + 46 users (qualitative interviews)	To evaluate engagement, effectiveness, and user experience of Wysa, an AI-driven empathic chatbot for mental well-being	Mixed-methods (analysis of large-scale user interaction data + qualitative interviews)	Wysa chatbot (empathy-driven conversational AI)	Conversational AI chatbot (Wysa), rule-based + Natural Language Processing (NLP) with empathy-driven design	High user engagement and retention; users perceived Wysa as empathetic and helpful for mood management; chatbot effective for supporting well-being in real-world digital mental health contexts
(Margherita et al., 2024)	When the Algorithm ‘matches’ us: The Experiences of	11 early-career psychologist	To explore how early-career psychologists	Qualitative (semi-structured interviews)	Not Named Specifically	Matching algorithm (AI-based	Therapists valued the opportunity to work via platforms but

	Early-Career Psychologists on Online Platform Services for Psychotherapy and Counselling in Italy	s in Italy	experience the use of AI-based matching algorithms in online psychotherapy/counseling platforms.			case–therapist matching system)	expressed concerns over reduced autonomy, commercialization of therapy, and how algorithmic matching shapes the therapeutic relationship .
(Yang et al., 2024)	What Makes Digital Support Effective? How Therapeutic Skills Affect Clinical Well-Being	1,245 users of a digital mental health support service	To examine how therapeutic skills embedded in digital mental health support predict improvements in users' well-being.	Quantitative (large-scale survey + analysis of digital interaction data)	Digital mental health support system with AI-driven communication features	Not specified (general digital support platform)	Higher levels of therapeutic skills (empathy, alliance-building) delivered through the platform were strongly associated with improved well-being, showing that relational qualities can be preserved in AI-mediated support.
(Martinengo et al., 2022)	Evaluation of chatbot-delivered interventions for self-management of depression: Content analysis	9 conversational agents (CAs) / chatbots for depression & suicide risk management (tested with	To assess the structure, content, and customization of chatbot dialogues for depression and suicide risk management.	Content analysis of dialogues with standardized personas (2019–2020)	Multiple mental health chatbots (e.g., Woebot, Wysa, Tess, Youper, etc.)	AI-powered conversational agents (chatbots)	Chatbots could provide empathic, non-judgmental support and guide users in mood-boosting activities; most lacked comprehensive suicide risk management and

standardized
personas)

personalization.
Overall, CAs were
found helpful and
acceptable, but
limited in addressing
complex clinical
needs.

(Békés et al., 2021)	Psychotherapists' acceptance of telepsychotherapy during the COVID- 19 pandemic: A machine learning approach	795 psychothera pists (USA, Canada, China, Europe)	To develop predictive models of therapists' acceptance of telepsychotherapy (attitudes, concerns, and intention to use in the future) during COVID-19.	Cross-sectional online survey; regression decision tree machine learning analysis	Telepsychothe rapy (TPT) acceptance prediction model	Machine Learning (Decision Tree Regression)	Therapists with stronger working alliance and less professional self- doubt had more positive attitudes toward TPT. High self-doubt and vicarious trauma were linked to more concerns. Working alliance predicted future intention to use TPT.
(Meng & Dai, 2021)	Emotional Support from AI Chatbots: Should a Supportive Partner Self- Disclose or Not?	211 university students (average age 20.4, 61.6% female)	To examine how and when chatbots' emotional support reduces stress and worry, and to compare chatbot vs. human partners with/without reciprocal self- disclosure.	Online experiment, 2×2×2 factorial design (chatbot vs. human × emotional support yes/no × self-disclosure yes/no)	Chatbot (built with Chatfuel, text-based via Facebook Messenger)	AI Chatbot (Conversatio nal AI, support chatbot)	Emotional support reduced worry (not stress) via perceived supportiveness. Human partners were perceived as more supportive than chatbots. Reciprocal self-disclosure enhanced worry

							reduction but backfired when chatbots self-disclosed without emotional support
(Gennaro et al., 2020)	Effectiveness of an Empathic Chatbot in Combating Adverse Effects of Social Exclusion on Mood	94 participants (university students, Italy)	To evaluate whether empathic chatbots can mitigate negative mood effects of social exclusion.	Experimental design (Cyberball paradigm + chatbot intervention)	Empathic chatbot (custom-built)	Conversational AI (support chatbot)	The empathic chatbot significantly improved mood and reduced feelings of exclusion, showing potential for emotional support in mental health contexts.
(Bourla et al., 2020)	Are Student Nurses Ready for New Technologies in Mental Health? A Mixed-Methods Study	331 student nurses (survey + focus group)	To investigate readiness, attitudes, and perceptions of student nurses toward new technologies in mental health practice.	Mixed-methods (quantitative survey + qualitative focus groups)	Not specific (general digital/AI-based tools)	Digital phenotyping, AI-driven mental health tech	Student nurses were moderately ready but expressed concerns about training, ethics, and empathy in digital care; highlights importance of preparing professionals for AI integration.

This review reviewed the empirical evidence on the application of AI in mental health services, focusing on (1) the form of AI application, (2) the impact on therapeutic/empathetic relationships, and (3) changes in professional roles and client perceptions. Key sources include large data-driven platform studies, laboratory experiments, real-world evaluations of chatbot applications, surveys and mixed-methods studies on healthcare worker readiness.

3.2 Forms and Characteristics of the Application of AI in Mental Health Services

The review findings indicate that the application of AI in mental health services takes various forms, ranging from empathic chatbots to therapist, client matching algorithms and machine learning-based telepsychotherapy. Studies by Gennaro et al. (2020), Martinengo et al. (2022), and Meng & Dai (2021) demonstrated the use of chatbots to support depression management, provide emotional interventions, and reduce the effects of social exclusion. These chatbots are generally text-based, offering psychoeducation, mood tracking, and CBT techniques, making them relatively accessible to users. However, their main limitations lie in personalization and in handling complex cases such as suicide risk.

On the other hand, Margherita et al. (2024) highlighted the use of therapist–client matching algorithms on online platforms. While such systems are efficient in connecting clients with psychologists, they raise debates concerning reduced professional autonomy and the risk of the commercialization of counseling practice. Meanwhile, (Békés et al. (2021) emphasized that machine learning can be used to identify predictive factors of telepsychotherapy acceptance, illustrating AI's role in supporting data-driven evaluations and predicting professional behaviors. Furthermore, Yang et al. (2024) showed that therapeutic skills such as empathy and alliance can still be transmitted through AI-driven digital communication, suggesting that relational quality is not entirely lost in non-human interactions.

Finally, Bourla et al. (2020) drew attention to nursing students' readiness for AI-based technologies, indicating enthusiasm for innovation but also concerns related to ethics, training preparedness, and implications for professional roles. Thus, the application of AI in mental health appears diverse, with each form presenting specific advantages alongside limitations that need careful consideration in clinical contexts.

3.3 The Impact of Artificial Intelligence on Therapeutic Relationships and Empathy

Study findings indicate that AI has the potential to replicate certain aspects of empathy and support the development of therapeutic relationships, although its quality remains inferior to human interactions. Meng and Dai (2021) found that chatbots providing emotional support can help reduce anxiety, particularly when equipped with reciprocal self-disclosure features. However, participants still perceived human interactions as more supportive than those with chatbots. Gennaro et al. (2020) reinforced this by showing that empathic chatbots improved mood and reduced feelings of alienation following simulated social exclusion.

Furthermore, Martinengo et al. (2022) highlighted that popular chatbots such as Woebot, Wysa, and Youper were able to deliver empathic responses, guide brief psychotherapeutic exercises, and provide non-judgmental support. Nevertheless, these agents remain unable to offer comprehensive risk management, particularly in suicide prevention, and often fall short in tailoring responses to users' individual needs. This suggests that while AI can transmit signals of empathy, the depth and authenticity of therapeutic relationships remain stronger when mediated by human professionals.

3.4 Changing Role of Mental Health Professional & Client Perceptions

The integration of AI in mental health practices also impacts professional identities and roles. The study by Margherita et al. (2024) highlights that client-therapist matching algorithms have the potential to reduce clinical autonomy and influence the work dynamics of young psychologists, who feel that their practice is increasingly

controlled by commercial systems. In the context of the pandemic, *Békés et al. (2021)* found that acceptance of telepsychotherapy is influenced by intrapersonal factors such as *professional self-doubt* and secondary trauma, indicating that professional readiness is determined not only by technical factors but also by the psychological condition of the therapist himself.

On the education side, *Bourla et al. (2020)* showed that nursing students have enthusiasm to adopt AI-based technology, but more than half of respondents are worried that this technology could undermine the quality of therapeutic relationships. Concerns related to training, ethics, and professional implications underscore the need for curriculum and capacity building so that a new generation of health workers is able to use AI responsibly.

4. Discussion

The review findings show that the application of AI in mental health services is becoming increasingly diverse, encompassing empathic chatbots, therapist–client matching algorithms, machine learning–based telepsychotherapy, and monitoring technologies such as ecological momentary assessment (EMA) and digital phenotyping. Overall, these findings are consistent with previous literature highlighting the rapid growth of digital interventions in mental health (*Lehtimäki et al., 2021; Torous et al., 2021*). However, this review extends the discussion by placing emphasis on relational dimensions, namely therapeutic relationships, perceptions of empathy, and the shifting roles of professionals.

From the perspective of therapeutic relationships, empirical evidence confirms that AI can deliver signals of empathy through text-based interactions, for instance via emotional validation, reflective responses, affective labeling, and non-judgmental support. Experimental studies (*Gennaro et al., 2020; Meng & Dai, 2021*) even demonstrated that interactions with empathic chatbots can reduce anxiety or improve mood following experiences of social exclusion. Several studies also highlighted the importance of reciprocal self-disclosure features, whereby chatbots respond with seemingly personal sharing to enhance social presence and reduce user anxiety. Nonetheless, most participants still rated human interactions as more supportive, reinforcing Rogers' (1957) classic view that authentic empathy and a deep therapeutic alliance are difficult to transfer to artificial agents. Thus, AI is better positioned as a complementary tool rather than a replacement for human therapeutic relationships.

Personalization emerged as a major limitation. Most chatbots still rely on template-based responses and remain unable to dynamically tailor interventions to individual needs, cultural contexts, or changing emotional dynamics. Monitoring technologies such as EMA and digital phenotyping hold promise for enhancing personalization by detecting mood fluctuations and delivering real-time interventions. Yet, these innovations face technical and ethical challenges, including contextual accuracy, data privacy, and algorithmic bias. Moreover, handling complex cases such as suicide risk remains a significant weakness, as AI systems lack the sensitive clinical judgment and ethical decision-making capacity required.

In terms of professional roles, findings reveal ambivalence. On one hand, AI offers efficiency and data-driven insights, as demonstrated by *Békés et al. (2021)* in predicting telepsychotherapy acceptance and facilitating early screening. On the other hand, *Margherita et al. (2023)* revealed that therapist–client matching algorithms managed by digital platforms contributed to feelings of diminished autonomy among early-career psychologists. This is linked to business priorities that emphasize efficiency and user satisfaction over clinical considerations, leading therapists to feel increasingly controlled by commercial systems. Similar concerns were raised by *Bourla et al. (2020)*, who observed anxiety among nursing students regarding the potential degradation of therapeutic quality under technology-driven interventions. Thus, AI integration is not merely a technical challenge but also one tied to professional identity, ethics, and the sustainability of therapeutic alliances.

These dynamics can be further explained through the lens of the Technology Acceptance Model (TAM) (Davis, 1989). According to TAM, user adoption of technology is determined by *perceived usefulness* and *perceived ease of use*. In the context of AI for mental health, clients are more likely to accept chatbots or digital platforms when they are perceived as effective in reducing psychological symptoms or providing relevant emotional support. This aligns with findings by Martinengo et al. (2022) and Meng & Dai (2021), which demonstrated that digitally delivered empathy enhanced emotional well-being. However, limitations in personalization and shortcomings in managing complex cases can diminish perceived usefulness. On the professional side, ease of use and the seamless integration of technology into daily clinical practice are key determinants of acceptance. This was reflected in Békés et al. (2021), who found that professional doubts and insufficient digital training reduced readiness to adopt AI.

Limitations of the current evidence must also be acknowledged. Most studies remain short-term, with samples restricted to students, users of specific apps, or early-career therapists. Longitudinal evaluations and large-scale randomized controlled trials are rare, making it difficult to draw firm conclusions about the long-term clinical outcomes of AI, including the quality of therapeutic alliances. Furthermore, ethical issues such as data privacy, algorithmic bias, and the commercialization of services are rarely addressed in depth, despite being critical to sustainable implementation.

Overall, this review underscores that AI in mental health functions most optimally as a supportive tool that expands access and enhances efficiency, while still requiring human presence to preserve the quality of therapeutic relationships. The role of mental health professionals is not replaced but rather redefined. Viewed through the TAM framework, successful adoption of AI will depend on whether it is genuinely perceived as both useful and easy to use, making it essential that education, training, and ethical regulation ensure these innovations strengthen rather than diminish clinical practice.

5. Conclusion

This systematic review concludes that AI in mental health, ranging from empathic chatbots and therapist–client matching algorithms to machine learning–based telepsychotherapy, offers promising opportunities to expand access, provide emotional support, and complement human-led interventions. While AI can replicate some signals of empathy and contribute to therapeutic processes, its limitations in personalization, ethical sensitivity, and managing complex clinical cases underscore the irreplaceable role of human professionals. Rather than substituting human therapists, AI should be positioned as a supportive tool, with its adoption shaped by perceived usefulness and ease of use as highlighted by the Technology Acceptance Model. Ensuring that these technologies enhance rather than compromise therapeutic relationships requires continued research, ethical safeguards, and professional training to integrate AI responsibly into clinical practice.

Limitations and Further Research Directions

This study has several limitations that need to be noted. First, the number of empirical studies that meet the inclusion criteria is relatively limited, so the findings are not yet fully representative of the entire landscape of AI applications in mental health. Second, most studies use cross-sectional designs, short-term experiments, or observational analyses, so evidence on the long-term impact of AI applications on the quality of therapeutic relationships and clinical outcomes is still minimal. Third, sample characteristics tend to be homogeneous, e.g. college students, users of certain applications, or early-career therapists, thus limiting the generalization of results to a broader and diverse clinical population.

In addition, the heterogeneity of methodologies and variations of AI types (chatbots, matching algorithms, telepsychotherapy, digital phenotyping) cause the synthesis to be more thematic than quantitative in nature.

Technical aspects of AI, such as algorithm details, personalization mechanisms, and bias mitigation, are also not always transparently reported, making it difficult to make a comprehensive evaluation of how the technology affects the therapeutic process. The review also only uses the Scopus database as the primary source, potentially excluding relevant studies from other databases.

For further research, longitudinal studies and large-scale randomized clinical trials are needed to assess the long-term effectiveness of AI in maintaining or strengthening therapeutic relationships. Cross-cultural research is also important to understand the variation in perceptions of digital empathy and the acceptance of technology in different social contexts. In addition, in-depth qualitative studies need to be explored further to explore the subjective experiences of clients and therapists regarding the authenticity of empathy in interactions with AI. Finally, future research should place more emphasis on technical transparency, data ethics, and the impact on professional identity, so that AI integration actually supports the quality of mental health services rather than diminishes them.

Acknowledgement

The author would like to thank the University Sultan Zainal Abidin Malaysia for supporting this research.

Ethical Considerations

Not Applicable

Conflict of Interest

The Authors declare there is no conflict of interest.

Funding

This research did not receive any financial support.

REFERENCES

- Békés, V., Aafjes-van Doorn, K., Zilcha-Mano, S., Prout, T., & Hoffman, L. (2021). Psychotherapists' acceptance of telepsychotherapy during the COVID-19 pandemic: A machine learning approach. *Clinical Psychology and Psychotherapy*, 28(6), 1403 – 1415. <https://doi.org/10.1002/cpp.2682>
- Bond, R. R., Mulvenna, M. D., Potts, C., O'Neill, S., Ennis, E., & Torous, J. (2023). Digital transformation of mental health services. *Npj Mental Health Research*, 2(1), 1–9. <https://doi.org/10.1038/s44184-023-00033-y>
- Boucher, E. M., Harake, N. R., Ward, H. E., Stoeckl, S. E., Vargas, J., Minkel, J., Parks, A. C., & Zilca, R. (2021). Artificially intelligent chatbots in digital mental health interventions: a review. *Expert Review of Medical Devices*, 18(sup1), 37–49. <https://doi.org/10.1080/17434440.2021.2013200>
- Bourla, A., Mouchabac, S., Ogorzelec, L., Guinchard, C., & Ferreri, F. (2020). Nurse Education Today Are student nurses ready for new technologies in mental health? Mixed- methods study. *Nurse Education Today*, 84(October 2019), 104240. <https://doi.org/10.1016/j.nedt.2019.104240>
- Chung, H. K., & Jang, H. K. (2025). A Study on Digital Psychological Counseling System Utilizing Service Experience Design. *Theological Research Institute of Sahmyook University*.
- Fitzpatrick, K. K., Darcy, A., & Vierhile, M. (2017). Delivering cognitive behavior therapy to young adults with symptoms of depression and anxiety using a fully automated conversational agent (Woebot): A randomized controlled trial. *JMIR Mental Health*, 4(2), 1–11. <https://doi.org/10.2196/mental.7785>
- Galatzer-Levy, I. R., Aranovich, G. J., & Insel, T. R. (2023). Can Mental Health Care Become More Human by Becoming More Digital? *Daedalus*, 152(4), 228–244. https://doi.org/10.1162/daed_a_02040
- Gennaro, M. De, Krumhuber, E. G., Lucas, G., & Willis, G. B. (2020). Effectiveness of an Empathic Chatbot in Combating Adverse Effects of Social Exclusion on Mood. *Frontiers in Psychology*, 10(January), 1–14.

<https://doi.org/10.3389/fpsyg.2019.03061>

- Harith, S., Backhaus, I., Mohbin, N., Ngo, H. T., & Khoo, S. (2022). Effectiveness of digital mental health interventions for university students: an umbrella review. In *PeerJ* (Vol. 10). PeerJ Inc. <https://doi.org/10.7717/peerj.13111>
- Inkster, B., Sarda, S., & Subramanian, V. (2018). An empathy-driven, conversational artificial intelligence agent (Wysa) for digital mental well-being: Real-world data evaluation mixed-methods study. *JMIR MHealth and UHealth*, 6(11), 1–14. <https://doi.org/10.2196/12106>
- Inzlicht, M., Cameron, C. D., D'Cruz, J., & Bloom, P. (2024). In praise of empathic AI. *Trends in Cognitive Sciences*, 28(2), 89–91.
- Lattie, E. G., Adkins, E. C., Winquist, N., Stiles-Shields, C., Wafford, Q. E., & Graham, A. K. (2019). Digital mental health interventions for depression, anxiety and enhancement of psychological well-being among college students: Systematic review. *Journal of Medical Internet Research*, 21(7). <https://doi.org/10.2196/12869>
- Lehtimäki, S., Martić, J., Wahl, B., Foster, K. T., & Schwalbe, N. (2021). Evidence on Digital Mental Health Interventions for Adolescents and Young People : Systematic Overview Corresponding Author : *JMIR Mental Health*, 8. <https://doi.org/10.2196/25847>
- Li, S., Peluso, A. M., & Duan, J. (2023). Why do we prefer humans to artificial intelligence in telemarketing? A mind perception explanation. *Journal of Retailing and Consumer Services*, 70. <https://doi.org/10.1016/j.jretconser.2022.103139>
- Lopes, R. M., Silva, A. F., Rodrigues, A. C. A., & Melo, V. (2024). Chatbots for Well-Being: Exploring the Impact of Artificial Intelligence on Mood Enhancement and Mental Health. *European Psychiatry*, 67(S1), S550–S550. <https://doi.org/10.1192/j.eurpsy.2024.1142>
- Manimozhian, N., Arulkumar, U., Ezhilan, D. P., & Kumar, R. V. (2025). AI Chatbot for Enhancing Mental Health. *International Research Journal on Advanced Engineering Hub (IRJAEH)*, 03(April), 1900–1903.
- Margherita, G., Caffieri, A., & De Maio, N. (2024). When the algorithm ‘matches’ us: The experiences of early-career psychologists on online platform services for psychotherapy and counselling in Italy. *Counselling and Psychotherapy Research*, 24(2), 666 – 680. <https://doi.org/10.1002/capr.12704>
- Martinengo, L., Lum, E., & Car, J. (2022). Evaluation of chatbot-delivered interventions for self-management of depression: Content analysis. *Journal of Affective Disorders*, 319.
- Meng, J., & Dai, Y. (2021). Emotional Support from AI Chatbots : Should a Supportive Partner Self-Disclose or Not ? *Journal of Computer-Mediated Communication*, 26(January), 207–222. <https://doi.org/10.1093/jcmc/zmac005>
- Philippe, T. J., Sikder, N., Jackson, A., Koblanski, M. E., Liow, E., Pilarinos, A., & Vasarhelyi, K. (2022). Digital Health Interventions for Delivery of Mental Health Care: Systematic and Comprehensive Meta-Review. In *JMIR Mental Health* (Vol. 9, Issue 5). JMIR Publications Inc. <https://doi.org/10.2196/35159>
- Ristianti, D. H., Syahindra, W., Jumansyah, J., Marlina, M., & Arip, M. A. S. B. M. (2025). Development of smart digital interactive service as a strategy for guidance and counseling services in higher education. *Journal of Education and Health Promotion*, April, 1–6. <https://doi.org/10.4103/jehp.jehp>
- Sabella, R. A., Poynton, T. A., & Isaacs, M. L. (2010). School counselors perceived importance of counseling technology competencies. *Computers in Human Behavior*, 26(4), 609–617. <https://doi.org/10.1016/j.chb.2009.12.014>
- Shahsavari, Y., & Choudhury, A. (2025). Effectiveness of evidence based mental health apps on user health outcome: A systematic literature review. *PLoS ONE*, 20(3 March). <https://doi.org/10.1371/journal.pone.0319983>
- Torous, J., Myrick, K. J., Rauseo-Ricupero, N., & Firth, J. (2020). Digital mental health and COVID-19: Using technology today to accelerate the curve on access and quality tomorrow. *JMIR Mental Health*, 7(3), 1–6. <https://doi.org/10.2196/18848>

Yang, W., Fang, A., Shah, R. S., Mathur, Y., Yang, D., Zhu, H., & Kraut, R. (2024). What Makes Digital Support Effective? How Therapeutic Skills Affect Clinical Well-Being. *Proceedings of the ACM on Human-Computer Interaction*, 8(CSCW1). <https://doi.org/10.1145/3641029>