

## AI-Driven Applications for Psychological Counseling: Global Trends and Impacts

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**Abstract:** The integration of Artificial Intelligence (AI) in psychological counseling has accelerated, especially through mobile and web-based platforms. AI-based systems such as chatbots, virtual therapists, and intelligent monitoring tools have transformed how individuals access mental health services. These technologies offer scalable, real-time support, reduce stigma barriers, and augment the work of human counselors. However, critical questions remain regarding their accuracy, ethical risks, cultural relevance, and emotional authenticity. This study applies a Systematic Literature Review (SLR) guided by the PRISMA method to synthesize peer-reviewed research on the forms, functions, and impacts of AI implementation in psychological counseling from 2016 to 2026. The review includes 25 valid references, with 80% drawn from online scientific journals and over half from international sources. Findings show that AI tools are widely used for mental health screening, psychoeducation, and therapy delivery. Positive impacts include accessibility and cost-efficiency, while negative concerns involve data privacy, algorithmic bias, and trustworthiness. Both counselor and user perspectives reveal a complex interplay between digital convenience and human empathy. The study concludes that while AI is a promising support mechanism in mental health services, it must be applied with cultural sensitivity, ethical safeguards, and professional integration. This review provides a foundation for future research and policy development concerning AI's responsible role in psychological support systems.

**Keywords:** Artificial Intelligence, Mental Health, Mobile Applications, Psychological Counseling, Systematic Literature Review.

## INTRODUCTION

The integration of Artificial Intelligence (AI) into psychological counseling has marked a significant shift in mental health care delivery, particularly in the wake of the COVID-19 pandemic, which has exacerbated global psychological distress and service gaps [2], [7]. AI-powered tools—such as chatbots, sentiment analysis engines, and virtual counselors—have gained traction as scalable, on-demand solutions for individuals seeking mental health support [2], [5], [8]. These technologies have been applied in both web-based and mobile counseling platforms, helping to democratize access to mental health resources while also raising critical ethical and usability concerns [3], [5].

The growing prevalence of mental health disorders globally, and particularly among youth and marginalized populations, has prompted stakeholders to explore innovative interventions [5], [22]. In Indonesia, despite increasing awareness, mental health services remain under-resourced and stigmatized, creating an opportunity for AI-driven platforms to complement human-centered counseling [14], [15], [21]. However, regional disparities in infrastructure, digital literacy, and ethical readiness may influence the effectiveness and acceptance of such technologies [2], [5], [13].

Studies report that AI applications in mental health are capable of screening for symptoms, providing psychoeducation, and offering conversational cognitive behavioral therapy (CBT) [1], [3]. Notably, chatbots have shown preliminary success in managing mild to moderate anxiety and depression [16]. Yet, concerns remain regarding privacy, algorithmic bias, cultural sensitivity, and the risk of users forming unhealthy attachments to AI systems [3], [5], [24].

The dual perspectives of counselors and users are vital in evaluating AI deployment. From the counselor's viewpoint, AI may enhance decision-making and reduce administrative burden, yet may also threaten professional identity or misinterpret complex emotional cues [5], [6], [11], [25]. From the user's side, advantages include anonymity, accessibility, and instant response, although limitations in empathy and context understanding persist [5], [9], [11], [25].

Table 1 provides examples of AI-based counseling applications, illustrating the diversity in design, delivery model, and target user groups across different countries.

**Table 1.** Examples of AI-Based Counseling Applications

<b>Application Name</b>	<b>Platform Type</b>	<b>AI Functionality</b>	<b>Target Users</b>	<b>Referensi</b>
Wysa	Mobile/Web	CBT-based chatbot	General public	[8]
Woebot	Mobile	Emotional support chatbot	Young adults, students	[1]
BetterHelp	Web-based	AI client-therapy support	Global	[21]
XiaoIce (China)	Mobile	Empathetic AI conversation	Adolescents	[12]
Riliv Satu Persen	Mobile/Web Web-based	Counseling and Guided Activity Support	Indonesian users	[22]
Happify	Mobile	AI companion, gamification, CBT	Global	[8]
MindBot (India)	Web-based	CBT and anxiety self-help bot	Students, professionals	[18]

With the increasing reliance on technology in psychological support systems, it becomes crucial to assess not only the functions and technical performance of AI systems, but also the social, cultural, and ethical implications of their adoption. This article aims to systematically review current AI applications in counseling, analyze their functional scopes, and evaluate their benefits and limitations from both counselor and user perspectives, using the PRISMA methodology to ensure comprehensive and transparent evidence synthesis.

## RESEARCH METHOD

This study adopts a Systematic Literature Review (SLR) approach to analyze the role of Artificial Intelligence (AI) in psychological counseling applications deployed through mobile and web-based platforms. The review follows the PRISMA 2020 framework to ensure transparency, replicability, and comprehensiveness in the selection and synthesis of literature.

1. Research Questions

To guide the review process, the following research questions (RQs) were formulated:

- RQ1: What forms of AI utilization are applied in mobile/web-based psychological counseling applications?
- RQ2: What are the primary functions and features of AI in these applications?
- RQ3: What are the perceived positive and negative impacts of AI-based counseling from both counselor and user perspectives?

2. Data Sources and Search Strategy

The literature search was conducted across multiple reputable academic databases, including Scopus, ScienceDirect, SpringerLink, SAGE Journals, Taylor & Francis Online, and PubMed Central. Only open-access peer-reviewed journal articles published between January 2020 and May 2025 were included.

A Boolean search strategy was applied using combinations of keywords such as:

- "Artificial Intelligence" AND "psychological counseling",
- "AI chatbot" AND "mental health" OR "digital therapist",
- "mobile mental health" AND "AI-based applications".

This process yielded an initial total of 241 records after duplicates were removed.

3. Inclusion and Exclusion Criteria

To ensure relevance and quality, articles were selected based on the following criteria:

**Table 2.** Inclusion and Exclusion Criteria

Criteria Type	Description
Inclusion	(i) Published between 2016–2026, (ii) Open access, (iii) Peer-reviewed, (iv) Focus on AI implementation in digital counseling platforms
Exclusion	(i) Non-English or non-Indonesian articles, (ii) Grey literature or ArXiv, (iii) Studies without empirical or technical relevance to AI counseling

From this filtering process, **25 articles** were deemed eligible and used in the final synthesis, including studies focused on global applications and those specifically relevant to Indonesia or other emerging economies.

4. Data Extraction and Quality Assessment

Each article was reviewed in full text and summarized based on the following attributes:

- Author and Year
- Study Objective
- AI Method or Model Used
- Application Platform (Mobile/Web)
- Core Functions and Features
- Findings on Impact and Effectiveness

A quality assessment checklist adapted from Kitchenham (2004) was applied to ensure methodological rigor. Articles scoring low on empirical contribution or technical clarity were excluded.

5. PRISMA Flow Summary

The following table summarizes the review process:

**Table 3.** PRISMA Flow Summary

Stage	Article Count
Records identified	362
Duplicates removed	121
Title and abstract screened	241
Full-text articles assessed	72
Final articles included	25

6. Limitations of the Review

This SLR focused solely on open-access and peer-reviewed sources, which may exclude high-quality research from subscription-based journals. Furthermore, while efforts were made to include diverse regional contexts, the dominance of English-language literature may underrepresent localized developments in non-English-speaking countries.

This methodological process ensures that the review provides a representative and evidence-based synthesis of current research on AI’s integration in digital psychological counseling. The next section discusses the findings and analysis according to the research questions.

**RESULT AND DISCUSSION**

This section presents the findings based on the three research questions. The analysis integrates insights from 25 peer-reviewed studies published between 2016 and 2026, examining how AI has been applied in psychological counseling platforms, its functions, and its implications for counselors and users.

1. Forms of AI Utilization in Counseling Applications

AI has been integrated into digital counseling platforms in various forms. The most common implementations include:

- Conversational agents (chatbots) using NLP for basic emotional support [6];
- Predictive models based on machine learning to identify mental health risks [5], [17];
- Emotion recognition systems employing sentiment analysis from text or voice inputs [7];
- Personalized content delivery via recommender systems [1], [3], [5];
- Automated triage and referrals in telehealth systems [19].
- These technologies are embedded in both mobile applications and web-based platforms, such as Woebot, Wysa, Happify, and MindBot [1], [2], [8], [18]

2. Functions and Features of AI-Based Counseling Apps

Across studies, several functional categories emerged:

**Tabel 3.** Functions Categories

Function	Description	Example Application	Reference
Screening and assessment	Automated symptom checkers for anxiety, depression, etc.	Youper	[4]

Conversational support	Real-time chat with empathetic, AI-driven agents	Wysa, Woebot	[1], [3], [8], [11]
Psychoeducation	Tailored delivery of mental health content based on user profile	Happify, Wysa, Woebot	[1], [5], [8]
Triage and referral	Redirecting users to human therapists based on severity	Ada Health, Babylon Health	[19]
Progress tracking	Monitoring emotional patterns and mood history	MoodPath	[1], [8], [22]

This diversity highlights AI's versatility in delivering mental health services, especially for low-risk users or as a supplement to therapist-led care.

### 3. Positive Impacts for Counselors and Users

From a user perspective, key positive outcomes include:

- 24/7 accessibility and anonymity, reducing barriers for those hesitant to seek help [5], [6], [21];
- Cost efficiency, making psychological support more affordable than traditional therapy [6], [13];
- Immediate response, reducing wait time for initial contact or self-regulation support [5].

For mental health professionals, AI systems serve as support tools for screening, monitoring, and preliminary intervention, allowing therapists to focus on complex cases [1], [3]. Several applications also provide dashboard features for real-time patient tracking [20].

In contexts like Indonesia, AI-driven apps help address limited access to professional psychologists, particularly in rural or underserved areas [8], [15].

### 4. Challenges and Negative Impacts

Despite the benefits, several challenges remain:

- Trust and emotional authenticity: Many users perceive AI agents as lacking empathy or nuance in response [6], [8], [11]
- Data privacy and security: AI platforms often rely on sensitive personal and emotional data, raising ethical concerns [3], [5], [9], [11].
- Algorithmic bias: Models trained on non-diverse datasets may misinterpret expressions of distress across cultures or languages [8], [11].
- Over-reliance risk: Users may substitute AI tools for necessary human-led interventions [23].

Counselors also report skepticism regarding the clinical validity of AI assessments and the lack of transparency in proprietary algorithms [10].

### 5. Regional Perspectives: Indonesia and Global Comparison

While most research originates from North America and Europe, applications in countries like Indonesia show promise due to increasing smartphone penetration and mental health awareness. However, challenges include limited digital literacy, uneven access to internet infrastructure, and the need for culturally adapted AI models [14].

Comparatively, in high-income regions, AI-based apps are often integrated into insurance-covered telehealth services, while in Indonesia and similar contexts, they are supplementary or private-sector led innovations.

### 6. Summary of Findings

The integration of AI into psychological counseling platforms is reshaping mental health services by offering scalable, personalized, and accessible tools. However, ethical, clinical, and cultural considerations must be central to further development.

## CONCLUSION

The integration of Artificial Intelligence (AI) into psychological counseling marks a transformative shift in how mental health services are delivered. This study conducted a PRISMA-based Systematic Literature Review (SLR) of 25 peer-reviewed articles published between 2020 and 2025, revealing a growing trend in the adoption of AI-driven applications—both mobile and web-based—for various counseling functions. These include screening, virtual conversation support, psychoeducation, mood tracking, and automated referral.

From the user's perspective, AI-based platforms offer clear advantages: 24/7 accessibility, affordability, anonymity, and real-time support. For counselors, these systems serve as valuable tools for preliminary screening, client monitoring, and resource optimization. Such benefits are especially significant in regions with limited access to licensed psychologists, such as rural areas in Indonesia.

However, challenges persist. Concerns regarding data privacy, algorithmic bias, and emotional authenticity remain critical. Users may question the depth of empathy offered by AI agents, while counselors express doubts about clinical accuracy and transparency. Furthermore, the risk of over-reliance on digital tools without professional supervision could potentially compromise care quality.

This review underscores the need for ethically grounded, culturally sensitive, and professionally integrated AI systems. Developers and policymakers must collaborate with mental health professionals to design tools that not only scale effectively but also respect user dignity and clinical boundaries. Additionally, future research should evaluate long-term outcomes and user experiences across diverse populations and cultural contexts.

Ultimately, AI in psychological counseling is not a replacement for human empathy but a powerful augmentation tool. With proper governance, it holds great promise in bridging mental health service gaps globally.

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