DESIGN OF AN ARTIFICIAL INTELLIGENCE (AI)-BASED COUNSELING SERVICE APPLICATION FOR UNIVERSITY STUDENTS

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Abstract

This study aims to identify the needs and design an artificial intelligence (AI)-based counseling service system tailored for students in open and distance higher education. The research is motivated by the high prevalence of psychological distress among students, limited access to professional counselors, and the underutilization of technology in adaptive and personalized psychological services. The study employed the Rapid Application Development (RAD) method, focusing on needs analysis through surveys with 73 students and interviews with seven experts and four application developers. The analysis revealed that over 82% of students had experienced academic stress, and approximately 70% expressed interest in using AI-based counseling services. Students expected the system to provide early detection, ensure anonymity, and include empathetic features powered by Natural Language Processing (NLP). Experts emphasized the importance of a human-in-the-loop approach, while developers highlighted the need for NLP integration, emotion detection, and ethical-by-design principles. These findings suggest that an effective AI counseling system must integrate technological capabilities, psychological sensitivity, and digital ethics to serve as a responsive and trustworthy emotional support tool for ODHE students.

Keywords: artificial intelligence, counseling, educational technology, mental health, ODHE students

1 INTRODUCTION

In the era of globalization, the advancement of science and technology (commonly referred to as IPTEK in Indonesia) has become an inevitable part of life for all segments of society. One of the most prominent products resulting from this technological development is the internet. Internet usage has permeated nearly every sector of life, driven by its easy and rapid access as well as the wide range of activities it enables, such as communication and commerce. These factors have made the internet an essential and inseparable aspect of modern society (Yulianti dalam Fadhillah & Lestari, 2025). Technological advancements have also given rise to new fields, particularly in the area of artificial intelligence (AI), which has brought about significant changes across various aspects of life.

In the digital era, AI technology has been widely adopted across various sectors, including education and healthcare, with the aim of enhancing efficiency and service accessibility. One notable application of AI in mental health is the use of chatbots that provide information or even technology-based counseling sessions. However, awareness of the importance of mental health remains relatively low in Indonesia. Data indicate that approximately 17.95 million adolescents in Indonesia have been identified as experiencing mental health disorders (Zulfikar, 2024), and 20% of the entire Indonesian population is at risk of developing such conditions (Ministry of Health, 2021).

Artificial Intelligence (AI) technology continues to be a widely discussed topic to this day. AI began gaining public attention around 2022 with the emergence of a chatbot program known as ChatGPT, developed by OpenAI (Assegaf et al., 2024). ChatGPT operates by processing commands or questions provided by users. Its rapid response time, high level of accuracy, and well-structured language output have impressed many users (Setiawan & Luthfiyani, 2023). Consequently, the number of ChatGPT users has grown across various segments of society. However, over time, other AI technologies have also emerged and become accessible, such as JasperAI, Microsoft Copilot, and PerplexityAI.

Counseling services in higher education institutions play a crucial role in supporting students' psychological well-being, academic achievement, and the development of interpersonal skills. University students often face a range of stressors, including academic demands, social conflicts, and personal issues, all of which can impact their emotional stability (Sabbilla & Subroto, 2024). This situation is further complicated by the social stigma that associates counseling with "psychological problems" or weakness, thereby reducing students' willingness to seek and utilize available counseling services.

Communication technology has offered opportunities to address several of these challenges; however, its use in counseling services remains limited. Most technology-based approaches, such as online counseling services, merely replicate the face-to-face format without offering more innovative solutions to issues of accessibility, personalization, and stigma (Chintyasari, 2025). Therefore, a new approach is needed—one that not only enhances accessibility but also provides adaptive and responsive emotional support tailored to students' needs.

University students, as a group particularly vulnerable to academic and social pressures, also face significant challenges in accessing effective counseling services. Key barriers to the utilization of traditional counseling include social stigma, a shortage of professional

counselors, and high costs. In this context, Artificial Intelligence (AI) holds potential as a solution to bridge the gap in access to mental health services for students, particularly within higher education settings. Advances in technology, especially in the fields of information and communication, have created substantial opportunities to develop more effective and efficient mental health assessment services (Fathoni et al., 2024). By leveraging technological innovations, mental health assessment services can be designed to offer more accessible and affordable solutions for the public—particularly in anticipation of the Society 5.0 era (Al-Hajji et al., 2019).

Previous studies have explored the role of AI in supporting mental health services. According to Christian & Daryanto (2024), AI-based chatbots have the potential to provide emotional support through Natural Language Processing (NLP)-based communication, which is capable of understanding conversational context and detecting users' emotional cues. Other research has shown that AI applications such as Woebot and Wysa have been successfully used to help users manage stress and anxiety through Cognitive Behavioral Therapy (CBT)-based approaches (Pizzi et al., 2021). However, most existing studies still focus on the general effectiveness of AI chatbots in mental health interventions without examining how university students utilize this technology in their academic and professional lives.

This study seeks to expand the discourse on the use of AI in mental health services by focusing on the perspectives of university students. Previous research has shown that AI can support counseling and mental health assessment services; however, specific studies on its utilization within the student context remain limited. Therefore, this study contributes to the development of AI-related research in the field of psychology by providing insights into how psychology students leverage this technology to enhance both their own mental health awareness and that of the wider community. The urgency of this research lies in the need for innovative solutions to support more accessible and affordable mental health services for students. Given the high prevalence of mental health issues in Indonesia and the shortage of professionals in the field (Yusrani et al., 2023), the use of AI as an assistive tool in counseling services is becoming increasingly vital. Furthermore, this study also contributes to understanding how AI can be adapted and optimally utilized by psychology students, who will eventually serve as future professionals in the mental health sector.

The use of Artificial Intelligence (AI) as a means to improve mental health has emerged as a viable option in the current era. The shortage of mental health professionals such as

psychologists and psychiatrists, the high cost of services, and the persistent stigma surrounding mental health disorders contribute to AI's potential to support mental health improvement and alleviate psychological issues. Furthermore, the availability of various AI-based tools—such as chatbots—enables individuals to seek information related to mental health. However, the lack of credibility in the information provided by AI remains a significant barrier. This can lead to tendencies toward self-diagnosis, which in turn may trigger specific mental health issues, such as anxiety, excessive fear, and stress (Maskanah, 2022; Winata & Anggraeni, 2023).

Based on the background described, the research questions in this study are: How is AI utilized in mental health services by university students, experts, and application developers, and how effective is AI in raising mental health awareness among students? This study aims to explore the potential of AI in enhancing university students' mental well-being, identify the benefits and challenges associated with AI-based mental health services, and provide recommendations for the development of more effective AI technologies to promote mental health awareness and support services in higher education settings. The expected outcomes include reducing the stigma surrounding mental health, improving the effectiveness of counseling services, and offering relevant technological solutions for the younger generation.

This study is grounded in two main theoretical frameworks. The first is communication psychology, which focuses on how emotional and interpersonal messages are conveyed and received in therapeutic interactions. In the context of AI, effective communication requires the system's ability to recognize both verbal and non-verbal emotional expressions, understand cultural contexts, and respond empathetically. These capabilities are essential for fostering trust and establishing therapeutic relationships that support the well-being of clients. The second theoretical foundation is Rogers's (2003) Diffusion of Innovations Theory, which explains how new technologies are adopted within a society. This study applies the theory to analyze university students' acceptance of AI as a counseling tool, identify barriers to its adoption, and develop strategies to accelerate the acceptance of this technology within the Indonesian cultural context. Key elements such as innovation, communication, time, and social systems will serve as central points in understanding the adoption process.

2 METHODOLOGY

This study employs the Rapid Application Development (RAD) method, comprising several key stages in the research process. The following is a detailed explanation of each stage:

1. Data Collection

   Data collection was conducted to analyze the needs for developing an AI Counseling System for university students and to identify existing problems within conventional counseling systems. The aim was to uncover the weaknesses of current manual and inefficient counseling services, such as limited student access to counselors and the lack of personalized support. Preliminary investigations were carried out through interviews with students, psychologists, and application developers, as well as a literature review on AI models in the field of guidance and counseling.

2. Planning

   This stage involved defining the objectives and scope of the AI Counseling System development. Planning included identifying key features to be developed, such as AI-based chatbots, data-driven recommendations, and integration with campus academic systems. It also involved mapping out the technologies to be used, including the selection of appropriate Natural Language Processing (NLP) models to understand student conversations and Machine Learning techniques to generate relevant recommendations based on their issues.

3. System Analysis

   System analysis was carried out to gain a deeper understanding of system requirements based on the previously collected data. This stage involved identifying the root causes of issues in the current counseling system and exploring how AI could address these limitations. The primary goal was to construct the logic behind the AI Counseling model to be implemented in the system. Techniques applied in this stage included user requirement analysis through surveys with students and educators, case studies of existing technology-based counseling systems, and initial testing of the AI algorithms to be used.

4. System Design

   Following system analysis, the next step was system design, where the conceptual model of the AI Counseling System was developed. This stage included designing a student-friendly user interface (UI), system architecture, and the interaction model of the AI chatbot that would assist students during digital counseling sessions. An initial prototype was developed to visualize system functionality based on the previously identified user needs.

5. System Implementation

   The final stage was system implementation, where the designed model was tested to determine whether the AI Counseling System functioned according to user needs. Implementation included testing the AI algorithms, conducting trials with a sample group of students, and evaluating the accuracy of AI-generated recommendations in providing advice or solutions to students' problems. Additionally, the effectiveness of the AI system was measured in comparison to conventional counseling methods.

This study specifically focuses on the data collection stage through needs analysis for the development of an AI Counseling System for university students. This phase serves as the foundation for the subsequent stages—planning, system analysis, system design, and implementation—in future research. The data collection process was conducted through questionnaire distribution to students and educators, interviews with experts in psychology and AI technology, and literature review related to technology-based counseling. The collected data were analyzed using thematic analysis techniques.

The results of this analysis will serve as the foundation for application development in subsequent research; therefore, this study is limited to identifying needs and conducting an initial conceptual design. In addition, at this preliminary stage, a literature review was conducted to identify relevant theoretical concepts that inform the appropriate stages in the development process of the AI-based counseling system. This aims to determine suitable theoretical foundations for guiding the stages of product development (Sukmadinata, 2006).

3 FINDINGS AND DISCUSSION

This section presents the results of the needs analysis for the development of an AI-based counseling system tailored to the context of open and distance higher education (ODHE). The analysis was conducted through interviews with experts and application developers, as well as surveys administered to students to explore their perceptions, experiences, and needs regarding adaptive and empathetic digital counseling systems. The primary objective of this analysis is to identify existing service gaps, assess the potential for technology adoption, and formulate ideal features and design approaches for the development of an AI-driven counseling service. The findings are thematically organized, encompassing expert perspectives, technical requirements from developers, and end-user (student) preferences, thereby providing both a conceptual and practical framework for designing a responsive, ethical, and inclusive digital counseling system.

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3.1 Expert Needs Analysis

Interviews in this study involved seven experts with backgrounds in psychology, educational technology, and counseling services in open and distance higher education. These informants were selected purposively based on their experience in student support services and their involvement in the development of technology-based systems for educational and mental health purposes. The interviews were conducted online using semi-structured instruments, with a primary focus on exploring the needs, challenges, and potential uses of artificial intelligence (AI) in student counseling services. This interview process aimed to capture both practical and conceptual perspectives from the experts regarding essential features of an AI-based counseling system, potential ethical and psychological challenges, and the ideal forms of interaction between students and the system. The findings from the interviews were then thematically analyzed to generate sub-themes that represent the core needs in designing the system.

3.1.1 Mental Health Service Gaps in Open and Distance Higher Education

Counseling services in open and distance higher education institutions (PTJJ) face significant challenges in terms of accessibility and effectiveness. Based on a needs analysis, experts highlighted that existing services still fall short in addressing the psychological needs of students. PTJJ has yet to offer comprehensive solutions to the complex needs of its learners.

"Student counseling services remain suboptimal." [Expert 2]

"Implementation is still far from optimal." [Expert 3]

These findings align with the WHO (2021) report, which indicates that most countries, including Indonesia, lack adequate mental health services for young people, including university students. This situation is further exacerbated by the social stigma associated with psychological services, the limited availability of professional staff (psychologists, counselors), and service structures that are often bureaucratic and unresponsive to student needs. According to Widyawati et al. (2025), psychological and social barriers contribute to students' reluctance to seek help, even when experiencing mental distress.

3.1.2 AI as an Innovative Solution for Access and Personalization

The use of artificial intelligence (AI) in mental health counseling services is regarded as a strategic alternative to address challenges related to access, limited human resources, and the need for service personalization. This study reinforces the notion that AI, particularly in the form of chatbots and recommendation systems powered by natural language processing

(NLP), holds significant potential. These recommendation systems can serve as tools for early detection, self-assessment, and the provision of initial advice based on case data.

“Yes, of course, by detecting problems early and providing initial interventions.” [Expert 3]

“Indeed, by creating an AI-powered counseling officer to address minor issues.” [Expert 1]

Christian & Daryanto (2024) emphasize that NLP-based chatbots are capable of capturing users’ emotional contexts and delivering adaptive responses. This aligns with findings from expert interviews in this study, which propose features such as standardized self-assessment, emotional tracking, and case-based recommendations as components of an ideal AI system. However, the adoption of technology cannot be separated from users’ sociocultural context. In Indonesia, students in open and distance higher education (ODHE) settings come from diverse social, economic, and geographical backgrounds, requiring technological approaches that are inclusive, user-friendly, and based on basic digital literacy (Rokhmawati et al., 2025).

3.1.3 The Role of Human-in-the-Loop

Meskipun AI dapat menghadirkan solusi teknis, namun tidak dapat sepenuhnya menggantikan While AI can offer technical solutions, it cannot fully replace the empathetic dimension essential to the counseling process. Interview findings reveal that the primary risks associated with AI use in this context include the absence of empathy, potential inaccuracies in self-diagnosis, and excessive reliance on technology. These concerns are significant, given that counseling is not merely an exchange of information but an interpersonal relationship grounded in trust and emotional validation (Adigwe & Okoro, 2016).

"Robots certainly cannot feel the empathy of their interlocutors." [Respondent 5]

"AI does not recognize emotions in the way humans do." [Respondent 7]

\From the perspective of communication psychology, therapeutic communication relies on nonverbal cues, emotional involvement, and interpersonal affirmation—all of which are difficult for AI to replicate (Guerrero & Floyd, 2006; Rogers, 1961).. Therefore, the involvement of professional counselors remains essential for conducting follow-up evaluations and addressing cases that exceed AI’s capabilities. The human-in-the-loop concept serves as a strategic approach wherein AI functions as the first layer of service, while human intervention remains crucial in final decision-making and further evaluation (Topol, 2019). This approach integrates the efficiency of AI with the ethical sensitivity of human professionals.

3.1.4 Relevance of the RAD Approach in Developing a Responsive System

The selection of the Rapid Application Development (RAD) method in this study is highly relevant for building a system that adapts to both user dynamics and technological advancements. In the RAD approach, early phases such as user requirements gathering serve as a critical foundation for iterative design and testing. This study adopts the RAD framework by emphasizing problem mapping through questionnaires and expert interviews prior to the development of the AI counseling prototype.

As explained by Mansyur et al. (2024), RAD facilitates a fast, iterative development cycle that is responsive to user feedback. In the context of technology-based psychological services, this process is essential to ensure that the system developed is not only technically efficient but also aligned with users' emotional and social needs.

Based on the questionnaire results, experts have also identified several key features that an AI-based counseling system must possess in order to be effective and adhere to psychological principles. The first feature is informed consent and system transparency, which involves clear communication about data security and potential risks of use. The second is the inclusion of a standardized self-assessment tool to help users independently recognize their psychological condition. The third feature is the capability of the AI to provide case-based recommendations using Natural Language Processing (NLP) technology that adapts to users' specific needs. Finally, the ideal interaction between users and the system is represented through a text- and voice-based chatbot, which serves as a digital counseling gateway and can refer users to human counselors when necessary. These four features reflect the integration of technological, ethical, and psychological aspects required in the design of an AI counseling service that is both effective and safe.

3.1.5 Diffusion of Innovation: Technology Adoption Strategies in Socio-Cultural Contexts

The Diffusion of Innovation Theory (Rogers, 2003) is employed in this study to understand the factors influencing technology adoption among university students. Findings from the needs analysis indicate that factors such as perceived usefulness, perceived ease of use, and social support significantly influence the acceptance of AI technologies in counseling services. A key aspect of innovation diffusion is the role of early adopters in influencing their peers. In this context, psychology students as early users have the potential to serve as change agents by introducing AI technologies to their fellow students. For the adoption process to be

effective, the system must be introduced using culturally sensitive approaches that consider local cultural norms, religious values, and public perceptions of technology.

From the experts' perspective, AI holds the potential to address the mental health service gaps that conventional services have not been able to reach, particularly within the context of distance higher education. Experts recommend features such as self-assessment tools, emotional tracking, case-based recommendations, and chatbots capable of recognizing context and providing empathetic responses. However, they emphasize the importance of human involvement in counseling processes, especially for emotionally complex cases, advocating for a human-in-the-loop approach. Meanwhile, application developers stress the importance of the system's technical capabilities, including the integration of Natural Language Processing (NLP), emotion detection, dashboard monitoring, and speech-to-text functionalities. They also highlight challenges related to accuracy validation and the critical need for strong privacy protections, recommending that the system be designed using a user-centered approach that is responsive to the unique characteristics of distance learning environments.

3.2 Needs Analysis of Application Developers

In addition to involving experts in the field of psychology, this study also conducted interviews with four application developers experienced in designing digital systems based on artificial intelligence (AI) and educational technology. These four informants were purposively selected based on their technical competencies in developing user interfaces, machine learning algorithms, and AI system integration within the contexts of educational and mental health services. The interviews were conducted online using a semi-structured approach to explore their perspectives on technical challenges, feature design, as well as security and privacy approaches in building AI-based digital counseling systems. The primary aim of these interviews was to gain in-depth insights into the technical feasibility, optimization of features based on Natural Language Processing (NLP) and Cognitive Behavioral Therapy (CBT), and risk mitigation strategies in the implementation of AI systems for student counseling. The information gathered from these developers is crucial in complementing the conceptual and psychological aspects obtained from previous interviews, thereby bridging user needs with the realistic capabilities of current technologies. The findings from these interviews were thematically analyzed to produce a comprehensive map of technical requirements and relevant system features.

3.2.1 Solusi Adaptif untuk Layanan Konseling Mahasiswa

In today's digital era, the use of artificial intelligence (AI) is increasingly being directed toward supporting the emotional and psychological dimensions of students. Within the context of counseling services, AI is considered to hold significant potential in providing more flexible and responsive access to individual psychological needs. Interviews with application developers reveal that chatbot technology based on Natural Language Processing (NLP) is regarded as the most relevant and adaptive solution for counseling services.

"Mobile- and web-based chatbots can serve as an entry point for student counseling services due to their flexibility and ease of integration." [Developer 3]

Multimodal chatbot systems are perceived as capable of enhancing student engagement. This approach enables the system to adapt to the preferences and needs of users from diverse backgrounds, including distance education students who may face time and device limitations. Such design reflects the principles of user-centered design in educational technology, where accessibility and user convenience are prioritized (Zorzetti et al., 2022).

3.2.2 Emotional and Psychological Feature Requirements

Beyond technical capabilities, AI in the context of counseling services needs to be optimized to understand and respond to students' psychological states with empathy. Developers emphasized the importance of integrating emotion analysis, speech-to-text functionality, and monitoring dashboards capable of interpreting users' emotions through both text and voice input. These features enable the system to detect emotional nuances conveyed through verbal language and vocal intonation, making the interaction not merely informative but more akin to a human counseling experience.

"AI can analyze written or spoken language and identify patterns of stress or anxiety." [Developer 2]

"Chatbot features, speech-to-text, and emotion detection through voice tone are crucial components." [Developer 3]

The incorporation of such features aligns with current developments in affective computing—a subfield of AI focused on enabling machines to recognize, understand, and even simulate human emotions (Calvo & D'Mello, 2010). By understanding emotional expressions, the system can offer more personalized early interventions that are attuned to the psychological conditions of students. This approach allows the system to account for the affective dimension

in digital interactions. By recognizing users' emotional expressions, AI can deliver more adaptive and context-sensitive interventions that align with students' psychological needs.

3.2.3 Integration of CBT- and Mindfulness-Based Psychological Approaches

To transform AI from a merely mechanical respondent into a more meaningful support system, the integration of scientifically grounded psychotherapeutic approaches is essential. One recommended strategy is to adapt the principles of Cognitive Behavioral Therapy (CBT) and Mindfulness-Based Therapy into AI-driven recommendation systems. This integration would enable AI to not only deliver automated responses but also provide guidance aligned with validated and effective counseling practices.

"AI can be trained using datasets derived from CBT and mindfulness modules to generate psychology-based recommendations." [Developer 1]

This integration is crucial, as CBT has been proven effective in helping individuals manage stress, anxiety, and depression (Beck, 2011). Applications such as Woebot have demonstrated that AI chatbots trained with CBT principles can deliver significant therapeutic effects (Fitzpatrick et al., 2017). However, in the context of Indonesian higher education, AI development must be carefully adapted to local cultural sensitivities and the specific needs of distance education (PTJJ) settings.

3.2.4 Validation, Accuracy, and Challenges of Empathic Responses

While AI offers efficiency, concerns regarding the quality and accuracy of its responses remain a critical issue. AI often struggles to recognize subtle or context-dependent emotional expressions. Inaccurate interpretations of emotional cues may lead to responses that are inappropriate or even counterproductive to the user's psychological well-being.

"The main technical challenge lies in AI's ability to comprehend emotional contexts that are often ambiguous and variable." [Developer 3]

To address this, respondents suggested that each AI-generated output should be validated by professionals or trained using relevant empathic datasets. In this way, AI systems can develop context-aware and empathetic responses, rather than relying solely on logical algorithms. This aligns with Topol's (2019) findings, which advocate for a human-in-the-loop approach as a core principle in the development of AI systems in the fields of healthcare and psychology.

3.2.5 Privacy, Security, and Ethics in AI-Based Services

Data security and user privacy emerged as major concerns in the interviews. Developers emphasized that systems must be designed with high encryption standards and ensure a clear separation between user data and the main analytics system. Several participants stated:

"...internal privacy policies are crucial to ensure that student data remains protected." [Developer 2]

"All user data must undergo masking processes and be subject to strict access control." [Developer 3]

Ethical handling of counseling data is particularly critical due to its sensitive nature. In the context of psychological services, breaches of privacy have not only technical implications but also psychosocial consequences. Therefore, ethical-by-design must be a foundational principle in engineering AI systems for counseling (Aly, 2025). Student adoption of such technologies heavily depends on the perceived trustworthiness of the system. Hence, AI systems must be designed with transparent, informative, and accountable communication, as highlighted by one respondent:

"Students will trust the system more if they understand how the AI works and know that their data is secure." [Developer 1]

Research on technology acceptance indicates that perceived security and ease of use are dominant factors in shaping trust in new systems (Wardani & Sulistiyowati, 2022). This is especially relevant in the context of AI-based counseling services, where users must feel psychologically and technically secure before engaging with the system. Consequently, the development of user interfaces (UI/UX) and educational content explaining how AI functions should be integral components of the system's implementation strategy.

3.3 Student Needs Analysis

A total of 73 students from various study programs at Universitas Terbuka participated in the questionnaire for this study, which was conducted online via a digital form in May 2025. All respondents were active undergraduate students across different semesters, with the majority in their 2nd to 5th semesters. The participants ranged in age from 18 to 27 years, with most in their early twenties—representing the characteristics of young adult learners. In terms of gender, the majority were female students. Most respondents also held part-time jobs as private employees, entrepreneurs, or casual workers, reflecting the common profile of open and distance higher education (ODHE) students who typically juggle dual roles as both

workers and learners. The collected data were analyzed quantitatively using descriptive statistics (frequency and percentage) to illustrate students' attitudes, perceptions, and preferences regarding AI-based counseling services. This statistical analysis was complemented by narrative interpretation to gain a more contextual understanding of the needs of ODHE students in accessing adaptive and supportive digital counseling services.

The survey revealed that 82.6% of students reported experiencing stress, anxiety, or academic pressure during their studies. To cope with such pressures, most students preferred to talk with friends or family, while only a few accessed professional counseling services or online platforms. This indicates that, despite a high need for psychological support, the utilization of formal services remains low—likely due to factors such as stigma, limited access, or lack of awareness regarding service procedures. These findings are consistent with Widyawati et al. (2025), who noted that structural and social barriers continue to hinder access to mental health services among adolescents and young adults.

When asked about their interest in AI-based counseling services, 69.6% of students expressed interest, while 26.1% were uncertain, and only 4.3% declined. The primary reasons for this interest include the perception that AI services are more accessible at any time, offer greater comfort due to their anonymous nature, and eliminate the need for waiting in line. Such services are considered well-suited to the flexible and independent lifestyle of distance learning university students. According to Topol (2019), AI designed for mental health services holds significant potential to reach users who are reluctant or face barriers in accessing conventional services.

Students also expressed their preferences regarding the style of AI responses, with 34.8% favoring systems that begin by asking questions before offering solutions, while others preferred AI that could directly provide suggestions or refer them to relevant resources. This indicates that students value adaptive and empathetic two-way interactions over rigid or overly technical response systems. In line with this, Fitzpatrick et al. (2017) found that AI chatbots employing a Cognitive Behavioral Therapy (CBT) approach can deliver significant therapeutic benefits when designed to facilitate exploratory and reflective dialogue.

Another noteworthy finding is students' strong attention to the early detection feature for psychological crises. As many as 65.2% of respondents considered this feature to be very important, while 34.8% rated it as moderately important. Not a single respondent deemed it unimportant. This indicates students' trust in AI as an early warning system for risks such as

depression or suicidal ideation, which are often hidden. In this context, AI is perceived not only as a communication tool but also as a mental health guardian capable of delivering early interventions when equipped with real-time emotional tracking algorithms and risk notification systems (Calvo & D'Mello, 2010).

Trust in AI also emerged as a crucial factor. The majority of students stated that transparency regarding how AI operates and its privacy policies would determine their comfort in using it. Furthermore, 73.9% of respondents indicated that anonymous access is essential to encourage openness. However, 26.1% cautioned against the risk of misuse if the service is entirely anonymous. This suggests that an ideal AI system should be designed with flexible access modes (anonymous and identified), while ensuring data protection through encryption and adherence to high ethical standards. Christian & Daryanto (2024) also emphasized that perceived anonymity can enhance willingness to disclose, but it must be balanced with safeguards against system abuse.

Regarding preferences for service integration, respondents were nearly evenly split between those who preferred integration with the campus counseling system and those who favored a standalone system for greater flexibility. This indicates the need for a hybrid model: AI can function as an independent initial support tool but should also include referral features to human counselors when necessary (human-in-the-loop), as recommended by Topol (2019). Additionally, 69.6% of students expressed willingness to use this service whenever they experienced psychological distress, while the rest would use it only in emergency situations. These figures reflect a high potential for user engagement if the system is developed using a user-centered design approach (Zorzetti et al., 2022).

From an educational perspective, students show the greatest interest in short educational videos and practical guide articles, followed by interactive infographics. This indicates that mental health literacy content in AI systems must align with the learning preferences of the digital generation, who tend to favor concise, visual, and easily digestible formats. The concept of microlearning is highly relevant in this context for enhancing student engagement and strengthening their understanding of psychological issues. Based on the preferences, concerns, and needs revealed through the questionnaire, the AI-based counseling system to be developed should be designed with the principles of accessibility, empathy, adaptability, transparency, and privacy protection. Integrating technology with human-centered psychological values is essential for ensuring that AI is not merely perceived as a digital tool,

but also as a trustworthy and relevant emotional companion in the lives of distance learning students.

From the students' perspective, the majority reported having experienced stress or academic pressure and expressed interest in using AI-based counseling services, particularly due to their 24/7 accessibility and anonymity. They emphasized the importance of features such as early detection of serious issues, empathetic interactions, and mental health education presented in user-friendly formats such as short videos or infographics. However, students also demanded that the system be transparent and secure, and suggested a hybrid service model that could function independently while also being connected to campus professional services. This preference for AI-based solutions reflects a significant opportunity to enhance psychological support and mental health literacy through technology-driven approaches.

4 CONCLUSION

This study aims to explore the needs of students, experts, and application developers regarding an artificial intelligence (AI)-based counseling system within the context of open and distance higher education. Additionally, it seeks to examine the potential effectiveness of AI in raising mental health awareness among students. The findings indicate that AI is perceived to hold significant potential as an innovative solution to overcome the limitations of conventional counseling services, particularly in terms of accessibility, time flexibility, service personalization, and the comfort of anonymity. Therefore, the development of an AI-based counseling application for ODHE students is highly promising. However, such a system must be designed through an interdisciplinary approach, integrating principles from psychology, digital ethics, communication technology, and software engineering. AI should not function as a replacement for human counselors but rather as an early support system that facilitates initial engagement, provides empathetic responses, and refers users to professional help when necessary.

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