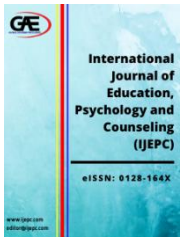
International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 63 (June 2026) PP. 601-618



INTERNATIONAL JOURNAL OF EDUCATION, PSYCHOLOGY AND COUNSELLING (IJEPC)
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ARTIFICIAL INTELLIGENCE IN MENTAL HEALTH INTERVENTIONS: A BIBLIOMETRIC REVIEW

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Article Info:

Article history:
Received date: 02.04.2026
Revised date: 19.04.2026
Accepted date: 25.05.2026
Published date: 18.06.2026

To cite this document:

Lee, J. K. S., & Tan. J. S. (2026). Artificial Intelligence In Mental Health Interventions: A Bibliometric Review. *International Journal of Education, Psychology and Counselling, 11*(63), 601-618.

Abstract:

Artificial intelligence (AI) has developed into a transformative framework within mental health interventions, facilitating the creation of scalable, data-driven, and personalized approaches for diagnosing, monitoring, and treating psychological conditions. Despite the fact that scholarly work in this interdisciplinary field has expanded rapidly, a full and systematic comprehension of its publication trajectories, intellectual architecture, and international collaboration dynamics is still insufficient. This study aims to close the existing gap by undertaking a bibliometric examination of scholarly literature focused on *artificial intelligence within mental health interventions*, covering the period from 2003 through April 2026. The dataset was compiled from the Scopus database through an advanced search strategy based on three primary keywords, comprising *artificial intelligence*, *AI*, and *mental health interventions*, which yielded a final corpus of 360 documents. A suite of tools, including Scopus Analyzer, OpenRefine, and VOSviewer software, was employed to perform descriptive, performance, and network analyses. Scopus Analyzer was used to evaluate publication trends, subject areas, and country contributions, while OpenRefine ensured data cleaning and consistency. VOSviewer was applied to construct and visualize keyword co-occurrence as well as co-authorship at the country level. The findings demonstrate a marked escalation in scholarly output, particularly after 2023, indicating growing global interest in AI-driven mental health solutions.

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Keyword analysis underscores prevailing focal areas, including *mental health*, *artificial intelligence*, *chatbots*, *machine learning*, and *depression*, while also drawing attention to newer and increasingly prominent subjects such as *generative AI*, *large language models*, and *digital mental health*. In addition, the co-authorship mapping reveals that the United States, the United Kingdom, and Australia function as primary nodes of international research collaboration, playing a pivotal role in connecting global scholarly networks. In summary, this study delivers a thorough examination of the research domain, illustrating that artificial intelligence is substantially reshaping approaches to mental health interventions. The results contribute meaningful insights for both scholars and clinical professionals, while also emphasizing the importance of sustained cross-disciplinary cooperation alongside careful ethical reflection in the progression of AI-driven mental health solutions.

DOI: 10.35631/IJEPC.1163035

Keywords:

Artificial Intelligence, Mental Health, Intervention

Introduction

Artificial intelligence (AI) is increasingly transforming the ways mental health care is detected, provided, and tracked. Motivated by rising global demand, shortages of clinicians, and advances in machine learning and conversational systems, AI-enabled tools are being explored across diagnosis, self-help, and formal treatment pathways (Craig et al., 2020; Ni & Jia, 2025; Balcombe, 2023). Among these, AI chatbots and other digital agents promise accessible, low-cost, and personalized support, while raising new questions about effectiveness, ethics, and the appropriate role of human clinicians (Casu et al., 2024; Lopes et al., 2024; Boucher et al., 2021; Balcombe, 2023). The growing body of research on "AI in mental intervention" spans clinical trials, meta-analyses, and scoping reviews, offering a timely foundation for systematic study.

A central strand of this work focuses on AI-driven conversational agents that deliver structured psychological interventions or psychoeducation. Comprehensive systematic reviews and meta-analyses indicate that these agents are capable of alleviating symptoms of depression and distress, with particularly notable effects when embedded in mobile or messaging platforms and using multimodal, generative approaches (Li et al., 2023; Zhong et al., 2024; Feng et al., 2024; Palmer et al., 2024). Meta-analytic evidence from randomized controlled trials finds small to moderate reductions in depression and anxiety symptoms in the short term after brief chatbot-based treatments, often peaking around eight weeks, although longer-term benefits beyond three months remain uncertain (Li et al., 2023). In young people aged 12–25, AI conversational agents yield moderate-to-large improvements in depressive symptoms, with the

most pronounced benefits observed in subclinical groups, but show little impact on anxiety, stress, or broader well-being measures (Zhong et al., 2024). Rapid reviews in college students similarly report significant reductions in anxiety and depression in most studies, yet highlight high attrition, heterogeneous designs, and reliance on self-report as important limitations (Nyakhar & Wang, 2025). These findings collectively position AI chatbots as promising, but not yet definitive, interventions.

Beyond symptom reduction, AI-based interventions are being evaluated for feasibility, acceptability, and integration into broader health and behavior-change programs. Randomized trials of conversational agents for health and mental outcomes typically report moderate to high acceptability, with completion rates often exceeding 80%, and use cases spanning counseling, cognitive-behavioral techniques, acceptance and commitment therapy, as well as coping skills training (Li et al., 2023; Aggarwal et al., 2023; Feng et al., 2024; Kurniawan et al., 2024). Reviews of AI-powered chatbots for chronic illness management and lifestyle modification describe favorable user satisfaction and preliminary evidence for improved self-care, stress management, and adherence, though many studies lack rigorous technical documentation and standardized outcome reporting (Aggarwal et al., 2023; Kurniawan et al., 2024; Craig et al., 2020; Goh et al., 2022). Context-aware digital behavior change interventions, which use AI and analytics to adapt content based on user context, further demonstrate benefits for physical activity, diet, and medication adherence, suggesting a generalizable framework for adaptive mental interventions (Craig et al., 2020; Cruz-Gonzalez et al., 2025; Bucher et al., 2024; Oyebode et al., 2022). Nonetheless, variability in design, sample size, and follow-up severely constrains generalizability.

AI in mental intervention also extends to diagnostic support, monitoring, and personalization. Systematic reviews map applications of machine learning and other AI methods to screening, risk prediction, treatment response forecasting, and ongoing monitoring of mental health conditions (Craig et al., 2020; Cruz-Gonzalez et al., 2025; Oyebode et al., 2022; Nan et al., 2024; Ni & Jia, 2025). For example, personalized machine learning models built from ecological momentary assessment and wearable data can predict individual clinicians' well-being and empathy, revealing substantial inter-individual differences in key predictors such as anxious mood, depressed mood, and social connection (Nan et al., 2024). Broader scoping reviews examining AI-driven digital interventions within mental health contexts identify applications spanning pre-treatment triage, therapeutic assistance during treatment, post-treatment monitoring, preventive strategies, and clinical education, while also reporting advantages such as shorter waiting periods, improved symptom tracking, and enhanced engagement (Cruz-Gonzalez et al., 2025; Ni & Jia, 2025; Boucher et al., 2021; Balcombe, 2023). At the same time, these reviews repeatedly stress issues of algorithmic bias, data diversity, privacy, explainability, and workflow integration as unresolved challenges that must be addressed before routine clinical deployment.

A further theme concerns hybrid models that combine AI with human support. Digital programs for anxiety that integrate an AI-driven conversational agent delivering clinician-written content, alongside clinician oversight and minimal human support, can achieve anxiety reductions comparable to both in-person as well as text-based cognitive-behavioral therapy while using a fraction of clinician time (Palmer et al., 2024). In crisis settings, AI chatbots can provide immediate, scalable psychological support when traditional therapy is inaccessible, although human-delivered psychotherapy still appears more effective in reducing anxiety and offering emotional depth (Spytska, 2025). Reviews emphasize that the most promising trajectory for AI

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in mental health intervention is not clinician replacement, but rather clinician augmentation: extending reach, providing between-session support, and enabling more personalized, data-driven care pathways (Casu et al., 2024; Ni & Jia, 2025; Boucher et al., 2021; Balcombe, 2023; Palmer et al., 2024). In conclusion, current evidence suggests that AI, especially conversational agents and adaptive, machine-learning-based systems, can meaningfully support mental health interventions, particularly for mild to moderate symptoms and early intervention. However, heterogeneity of methods, limited long-term data, and significant ethical, technical, and implementation challenges underline the need for rigorous, transparent trials and carefully designed human–AI collaboration models in order to fully unlock their potential within mental health care.

Research Question

1. How has the trajectory of scholarly output on *artificial intelligence in mental health interventions* evolved over the period spanning 2003 to April 2026?
2. Which publications exhibit the strongest scholarly influence within the domain of *artificial intelligence in mental health interventions*, as indicated by citation-based impact metrics?
3. What are the predominant and emerging thematic structures in *artificial intelligence in mental health interventions*, as identified through keyword co-occurrence network analysis?
4. What patterns characterize international research collaboration in *artificial intelligence in mental health interventions*, as evidenced by country-level co-authorship network analysis?

Methodology

Bibliometric analysis refers to the structured process of collecting, arranging, and critically assessing bibliographic information extracted from academic literature (Assyakur & Rosa, 2022; Alves et al., 2021; Verbeek et al., 200). In addition to foundational descriptive indicators such as the identification of publication outlets, patterns of publication over time, and prominent contributors (Wu & Wu, 2017), bibliometric methodologies also include more sophisticated techniques like document co-citation analysis. A thorough literature review necessitates an iterative and well-organized procedure that involves precise keyword determination, extensive database searching, and in-depth analytical scrutiny. This disciplined methodology supports the construction of a strong bibliographic dataset while simultaneously improving the dependability and validity of the findings (Fahimnia et al., 2015).

In this framework, the current investigation places emphasis on publications with substantial impact, since such studies offer essential perspectives on the conceptual underpinnings of the research domain. To safeguard the precision and uniformity of the dataset, Scopus was selected as the principal repository for data extraction (Di Stefano et al., 2010; Khiste & Paithankar, 2017; Al-Khoury et al., 2022). In addition, in order to preserve a stringent level of academic integrity, the inclusion criteria were restricted exclusively to peer-reviewed journal articles, with books and lecture notes intentionally omitted (Gu et al., 2019). U Drawing upon Elsevier's Scopus database, which is widely acknowledged for its comprehensive scope, pertinent literature spanning from 2003 through April 2026 was methodically assembled for further examination.

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Data Search Strategy

The bibliometric dataset pertaining to Artificial Intelligence (AI) applications in mental health interventions was compiled through an advanced query framework within the Scopus database, designed to ensure comprehensive coverage and high relevance of retrieved publications. Table 1 shows that a structured search query was employed to ensure the retrieval of relevant literature, using the string: TITLE-ABS-KEY (Artificial AND Intelligence OR AI AND Mental AND Health AND Interventions). This query was constructed to identify research examining the convergence of AI with mental health interventions by targeting keywords within titles, abstracts, and author-defined terms. To enhance the relevance and consistency of the dataset, additional filters were applied, including restriction to English-language publications and subject areas limited to Social Sciences (SOCI) and Psychology (PSYC).

Following the initial retrieval, a systematic screening procedure was carried out in accordance with predefined inclusion and exclusion criteria, as specified in Table 2. In particular, only English-language publications were retained to ensure linguistic uniformity and enable precise interpretation, while any non-English materials were removed from consideration. Regarding disciplinary boundaries, research categorized under Social Sciences and Psychology was included, given their direct relevance to mental health research, whereas publications from other subject areas were excluded to preserve analytical precision. This screening procedure ensured that the final dataset comprised high-quality, contextually relevant studies aligned with the research objectives. By applying these rigorous selection criteria, the study enhances the validity and reliability of the bibliometric findings, establishing a solid basis for delineating research trajectories and the intellectual architecture of the field. The concluding dataset comprised 360 documents, which formed the principal corpus for the ensuing bibliometric examination. This approach ensured a focused yet sufficiently broad corpus, capturing interdisciplinary contributions while maintaining thematic coherence.

Table 1: The Search String

Scopus	TITLE-ABS-KEY (Artificial AND Intelligence OR AI AND Mental AND Health AND Interventions) AND (LIMIT-TO (LANGUAGE , “English”)) AND (LIMIT-TO (SUBJAREA , “SOCI”) OR LIMIT-TO (SUBJAREA , “PSYC”))

Table 2: The Selection Criterion is Searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
Subject	Social Sciences and Psychology	Others

Data Analysis

VOSviewer is a broadly utilized and accessible bibliometric analysis program created by Van Eck and Waltman at Leiden University in the Netherlands (Van Eck & Waltman, 2010, 2017).

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The software is purpose-built to support the visualization and examination of scientific publications, incorporating sophisticated features for generating network maps, grouping interconnected entities through clustering, and producing density-based visual outputs. It accommodates a diverse set of bibliometric linkages, such as co-authorship networks, co-citation patterns, and keyword co-occurrence relationships, which collectively allow for an extensive representation of research domains. With its interactive user interface and ongoing enhancements, it enables streamlined processing as well as dynamic investigation of large bibliometric datasets. In addition, VOSviewer offers functions for calculating bibliometric indicators, tailoring visual presentations, and merging datasets from different origins, reinforcing its utility as a robust analytical tool in scholarly research.

A key advantage of VOSviewer is its capacity to convert intricate bibliometric datasets into visual formats that are both intuitive and readily interpretable. The software is especially proficient in network-oriented analyses, encompassing the grouping of related elements, detection of keyword co-occurrence relationships, and generation of density visualizations. Its user-friendly and straightforward interface enables both early-career and seasoned researchers to systematically examine and make sense of evolving research patterns. Ongoing methodological refinements and technical enhancements keep VOSviewer positioned at the forefront of bibliometric visualization tools, providing flexible analytical capabilities across a wide range of data configurations, including citation networks and authorship structures.

In the present study, bibliographic records comprising article title, publication year, source journals, author information, citation counts, as well as author keywords were extracted from the Scopus database in Plain Text format, spanning the timeframe from 2003 through April 2026. The resulting dataset was then processed using VOSviewer (version 1.6.20). By employing VOS-based mapping alongside clustering procedures, the software facilitated the generation and structured analysis of bibliometric networks. As an alternative to Multidimensional Scaling (MDS), VOSviewer utilizes a distance-oriented mapping framework in which the spatial separation between elements reflects the extent of their relatedness (Van Eck & Waltman, 2010). While this approach is theoretically aligned with MDS (Appio et al., 2014), the VOS methodology is distinguished by its application of normalization methods specifically designed for co-occurrence data. One commonly used approach is the association strength ASijAS_{ij}ASij, which quantifies the relationship between items based on normalized co-occurrence frequencies (Van Eck & Waltman, 2007):

$$AS_{ij} = \frac{C_{ij}}{W_i W_j}$$

This indicator captures the proportional association between the empirically observed co-occurrence frequency of items iii and jjj and the frequency that would be expected under the assumption of statistical independence, thereby providing a normalized measure of association strength within the network.

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Result and Discussion

There are 4 research questions being discussed in this section.

RQ1: How Has The Trajectory Of Scholarly Output On Artificial Intelligence In Mental Health Interventions Evolved Over The Period Spanning 2003 To April 2026?

The temporal distribution of publications on *artificial intelligence in mental health interventions* demonstrates a pronounced exponential growth pattern, particularly from 2023 onwards. Referring to Figure 1 and Table 3, early contributions between 2003 and 2018 were sporadic and minimal, with annual outputs not exceeding four publications and several years recording only a single study (e.g., 2003, 2012, and 2018, each at 0.28%). This limited activity reflects the nascent stage of both artificial intelligence (AI) applications and digital mental health research during this period, when technological infrastructure, data availability, and clinical acceptance of AI-driven tools were still under development. A gradual increase can be observed from 2019 to 2022, but the growth remains modest, suggesting that the field was still in an exploratory phase. The relatively low output during these years may also be attributed to methodological uncertainties, ethical concerns, and the absence of extensive clinical-scale validation for AI-based mental health interventions.

In contrast, the sharp surge in publications from 2023 to 2026 indicates a rapid maturation and mainstream adoption of this interdisciplinary field. The substantial rise in 2025 (175 publications, 48.61%) and 2026 (69 publications, 19.17% as of April) highlights an intensified global research interest, together comprising over two-thirds of the overall output within a short time frame. This acceleration can be justified by several converging factors, such as notable progress in machine learning as well as natural language processing, increased accessibility of large datasets, and heightened demand for scalable mental health solutions following the COVID-19 pandemic. In addition, the incorporation of AI into healthcare systems, coupled with growing institutional and governmental support for digital health innovations, has catalyzed research productivity. The marked increase in recent years also suggests a shift from conceptual exploration to applied and empirical studies, reflecting greater confidence in the capability of AI to confront mental health issues and indicating the establishment of the field as a critical research domain.

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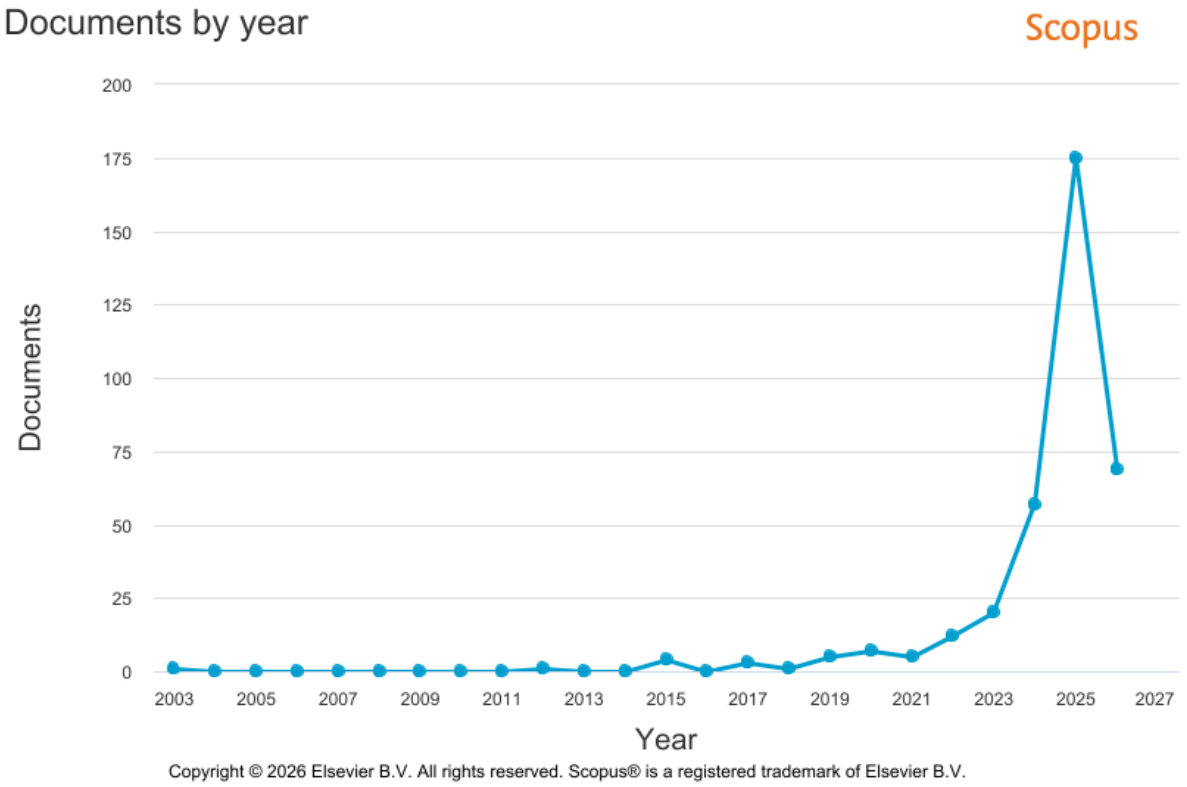

Figure 1: Trend Of Research in *Artificial Intelligence in Mental Health Interventions* by Years

Table 3: Publication of Artificial Intelligence in Mental Health Interventions by Years

YEAR	Number of Publications	Percentage (%)
2026	69	19.17
2025	175	48.61
2024	57	15.83
2023	20	5.56
2022	12	3.33
2021	5	1.39
2020	7	1.94
2019	5	1.39
2018	1	0.28
2017	3	0.83
2015	4	1.11
2012	1	0.28
2003	1	0.28

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EISSN : 0128-164X
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RQ2: Which Publications Exhibit The Highest Scholarly Influence Within The Domain Of Artificial Intelligence In Mental Health Interventions, As Indicated By Citation-Based Impact Metrics?

The citation patterns presented in Table 4 indicate a strong intellectual foundation grounded in both classical psychological theory and contemporary applications of AI within mental health contexts. The most frequently referenced study, Pennebaker et al. (2003), with 2,129 citations, substantially exceeds all other entries, underscoring its seminal influence on the field. Although this study is not explicitly focused on AI, its emphasis on natural language use and psychological expression provides an essential theoretical basis for many AI-driven mental health applications, particularly those utilizing natural language processing and sentiment analysis. This observation suggests that highly influential contributions within this domain often emerge from interdisciplinary integration, combining insights from psychology and computational sciences. Additionally, earlier studies such as D'Alfonso et al. (2017) illustrate the initial development of AI-assisted interventions, particularly in the context of digital and online therapeutic platforms, reflecting a gradual transition from conceptual foundations to applied technological solutions.

More recent publications in Table 4, particularly those published from 2020 onwards, demonstrate a clear shift toward applied, technologically advanced, and ethically informed research directions. Studies by D'Alfonso (2020) and Sun et al. (2023) highlight the increasing consolidation of AI within psychiatric research, diagnosis, and treatment processes, whereas Bond et al. (2023) and Siddals et al. (2024) emphasize the ongoing digital transformation of mental health care systems and the rise of generative AI technologies. The relatively high citation counts achieved by these recent publications, despite their shorter time span, indicate accelerated knowledge dissemination and growing academic and societal interest. Furthermore, the inclusion of research addressing ethical considerations (Saeidnia et al., 2024) and advanced intervention technologies such as virtual reality (Bell et al., 2024) reflects the maturation of the field toward responsible, innovative, and clinically relevant applications. Collectively, these trends indicate that meaningful work within this field is progressively defined by technological relevance, interdisciplinary integration, and responsiveness to evolving mental health needs, thereby influencing the direction in which AI-based mental health interventions are advancing.

Table 4: Most Cited Author

No	Authors	Title	Year	Source title	Cited by
1	Pennebaker et al. (2003)	Psychological Aspects of Natural Language Use: Our Words, Our Selves	2003	Annual Review of Psychology	2129
2	D'Alfonso (2020)	AI in mental health	2020	Current Opinion in Psychology	312
3	D'Alfonso et al. (2017)	Artificial intelligence-assisted online social therapy for youth mental health	2017	Frontiers in Psychology	158

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4	Dekker et al. (2020)	Optimizing Students' Mental Health and Academic Performance: AI-Enhanced Life Crafting	2020	Frontiers in Psychology	146
5	Sun et al. (2023)	Artificial intelligence in psychiatry research, diagnosis, and therapy	2023	Asian Journal of Psychiatry	119
6	Bond et al. (2023)	Digital transformation of mental health services	2023	npj Mental Health Research	118
7	Oyebode et al. (2023)	Machine Learning Techniques in Adaptive and Personalized Systems for Health and Wellness	2023	International Journal of Human-Computer Interaction	106
8	Saeidnia et al. (2024)	Ethical Considerations in Artificial Intelligence Interventions for Mental Health and Well-Being: Ensuring Responsible Implementation and Impact	2024	Social Sciences	102
9	Siddals et al. (2024)	"It happened to be the perfect thing": experiences of generative AI chatbots for mental health	2024	npj Mental Health Research	98
10	Bell et al. (2024)	Advances in the use of virtual reality to treat mental health conditions	2024	Nature Reviews Psychology	90

RQ3: What Are The Predominant And Emerging Thematic Structures In Artificial Intelligence In Mental Health Interventions, As Identified Through Keyword Co-Occurrence Network Analysis?

The keyword network visualization presented in Figure 2 reveals a highly concentrated and interconnected research structure within the field of *artificial intelligence in mental health interventions*. The prevalence of foundational keywords like *artificial intelligence* (133 occurrences; total link strength = 254) and *mental health* (90 occurrences; TLS = 184) indicates that these concepts serve as the central pillars of the research domain, around which other themes are organized. The strong link strength values further suggest that these keywords frequently co-occur with a wide range of related terms, reflecting their integrative role in connecting technological and clinical perspectives. Supporting this core, keywords such as *machine learning* (32; TLS = 70), *chatbot* (22; TLS = 59), *depression* (21; TLS = 69), and *anxiety* (15; TLS = 50) demonstrate that the field places strong emphasis on both AI methodologies and specific mental health conditions. This pattern indicates that research is not purely technical but is strongly application-driven, focusing on addressing prevalent psychological disorders through AI-based solutions.

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Furthermore, the distribution of keywords in Figure 2 highlights several emerging and specialized research directions. Terms such as *large language models* (18; TLS = 49), *ChatGPT* (7; TLS = 22), and *generative artificial intelligence* (6; TLS = 10) signify the growing influence of advanced AI technologies, particularly in conversational systems and automated mental health support. Simultaneously, keywords related to delivery platforms and intervention models, including *digital mental health*, *mHealth*, *conversational agents*, and *digital therapeutics*, reflect a shift toward scalable and accessible healthcare solutions. The presence of terms such as *cognitive behavioral therapy*, *psychotherapy*, and *intervention* further indicates the integration of established clinical practices with AI technologies. Additionally, emerging concerns such as *ethics*, *explainable AI*, and *privacy-related concepts*, although relatively lower in occurrence, suggest that ethical considerations are gaining attention but remain underexplored compared to technical advancements. Overall, the network structure demonstrates a field that is rapidly evolving toward personalized, data-driven, and technology-enabled mental health care, driven by both innovation in AI and increasing societal demand for accessible mental health services.

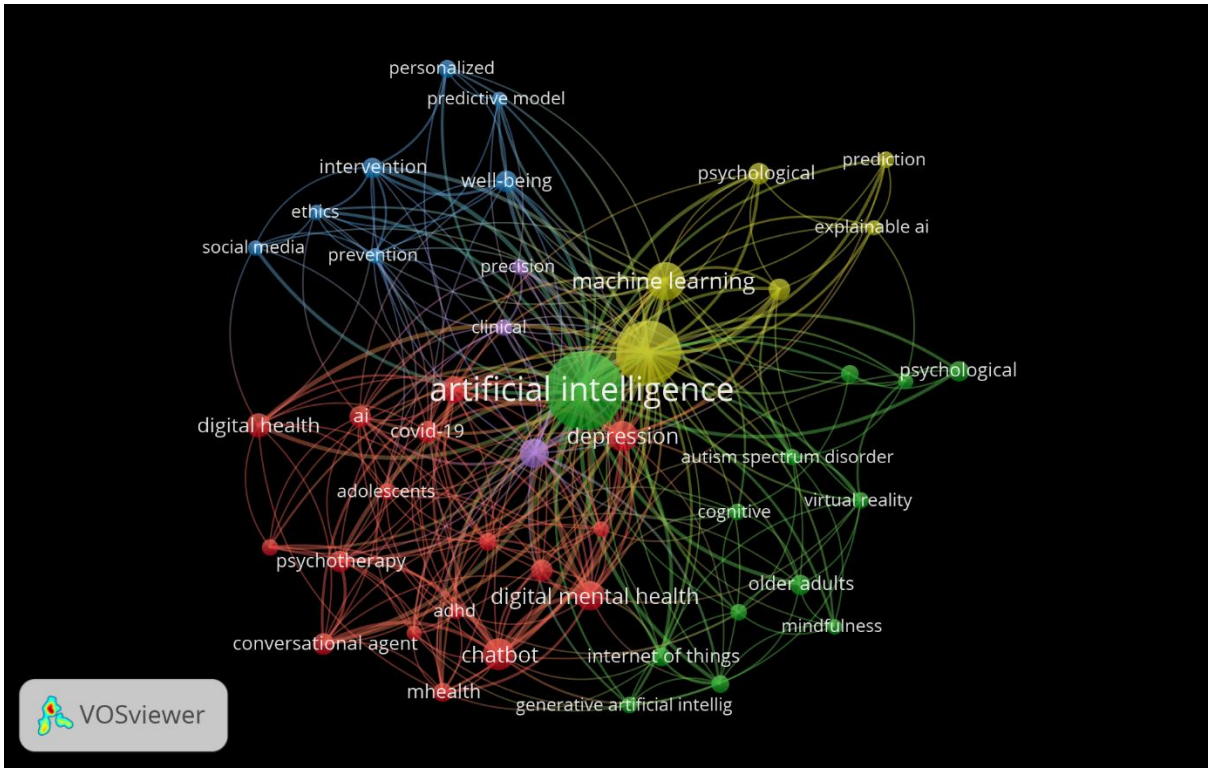

Figure 2: Network Visualization Map Of Keywords' Co-Occurrence

RQ4: What Patterns Characterize International Research Collaboration In Artificial Intelligence In Mental Health Interventions, As Evidenced By Country-Level Co-Authorship Network Analysis?

The country-level co-authorship network depicted in Figure 3 illustrates a highly interconnected global research structure in the domain of *artificial intelligence in mental health interventions*, with clear dominance by a few leading countries. The United States stands out as the foremost contributor, producing 98 publications and accumulating 3,215 citations, alongside the greatest total link strength (51), which collectively reflects not only substantial

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research productivity and extensive international collaboration. This central position suggests that the United States functions as a major hub within the global network, enabling the flow of knowledge and supporting collaborative research activities across different regions. In a comparable manner, the United Kingdom (37 publications; TLS = 36) and Australia (26 publications; TLS = 37) demonstrate high link strength relative to their publication output, highlighting their strong integration into international collaboration networks. These findings reflect the presence of well-established research infrastructures, funding mechanisms, and interdisciplinary expertise in these countries, which enable them to lead and coordinate global research efforts.

In contrast, emerging research contributors such as India (47 publications; TLS = 10) and China (46 publications; TLS = 20) exhibit high publication output but comparatively lower total link strength, suggesting that their research activities are more domestically oriented or less integrated into international collaborations. This disparity indicates that while these countries are rapidly expanding their research capacity, there is still potential to strengthen their global research partnerships. European countries such as Italy, Germany, the Netherlands, and Switzerland show moderate levels of both productivity and collaboration, indicating stable participation in the global network. Notably, Switzerland, despite having only five publications, demonstrates relatively high link strength (17), suggesting strong collaborative ties and high-quality partnerships. This supports the argument that research impact is not governed only by the quantity of output produced, but is also shaped significantly by the strength and quality of collaborative relationships.

Furthermore, countries with relatively low publication output and link strength, such as Brazil, Malaysia, Indonesia, and Mexico, occupy peripheral positions in the network, indicating limited engagement in global research collaborations. The presence of such countries highlights the uneven distribution of research capacity and collaboration opportunities across regions. However, their inclusion in the network also suggests growing participation and potential for future expansion. Overall, the structure observed in Figure 3 highlights the critical role of cross-border collaboration in propelling AI-oriented mental health research forward, since nations exhibiting greater total link strength are typically more influential in shaping the field. Strengthening global partnerships, particularly between established research hubs and emerging contributors, will be essential for promoting inclusive knowledge exchange, enhancing research quality, and accelerating innovation in mental health interventions.

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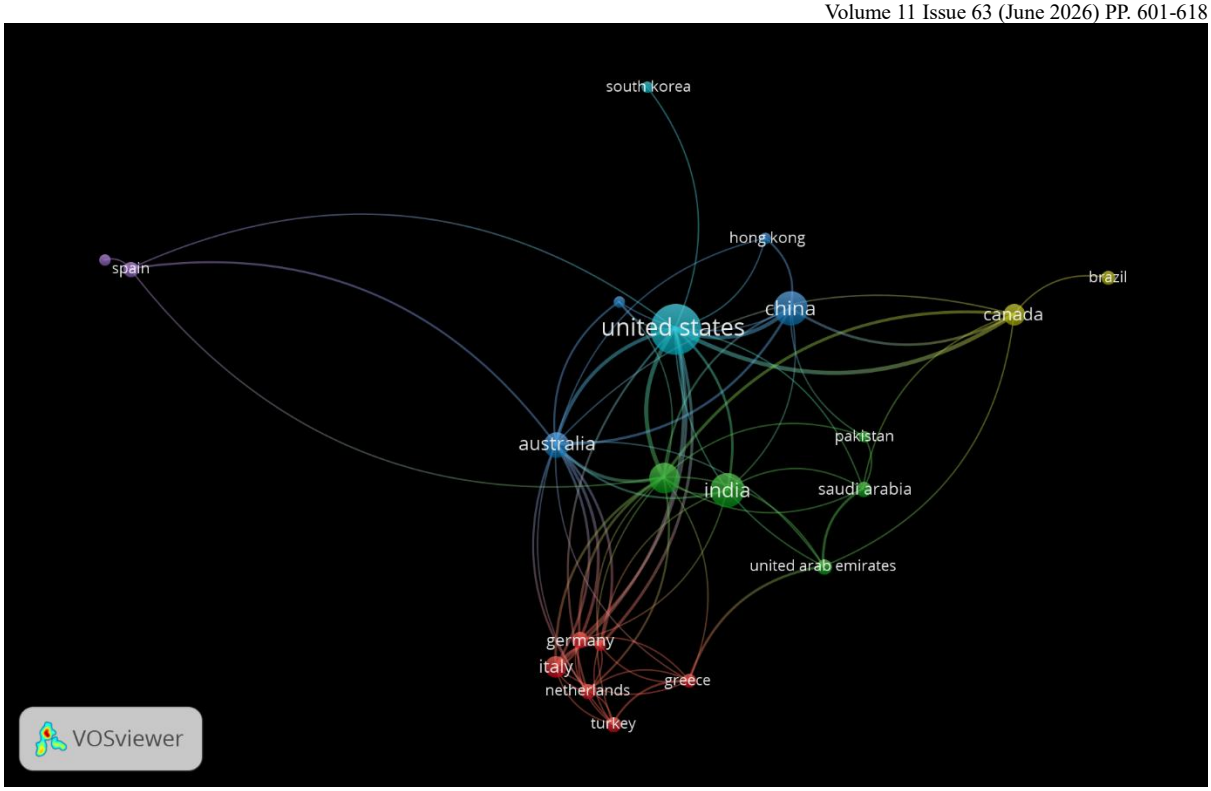

Figure 3: ***Country-Level Co-Authorship Networks***

Conclusion

The researcher performed a bibliometric analysis of 360 scholarly works focused on the application of artificial intelligence in mental health interventions, all sourced from the Scopus database covering the period from 2003 to April 2026. This dataset represents a focused subset of global scholarly output within the domain of AI and mental health under specific inclusion criteria (Social Sciences and Psychology, English-language journal articles). A performance and descriptive analysis was first conducted to examine the annual publication trends, countries, authors, source journals, and thematic development of the field. The findings reveal a marked surge in research productivity, particularly from 2023 onward, suggesting that the field has entered a rapid growth phase characterized by increasing scientific attention and practical relevance.

The thematic organization of the field, as obtained through keyword co-occurrence analysis, reveals a compact yet highly interconnected knowledge base centered on core concepts. High-frequency keywords such as artificial intelligence, mental health, machine learning, chatbot, and depression demonstrate strong centrality and link strength, indicating their foundational role in shaping the domain. Emerging themes such as large language models, ChatGPT, and digital mental health suggest a transition toward advanced AI methodologies and scalable intervention systems. The co-occurrence network, consisting of 21 key terms organized into 6 clusters with a total link strength of 148, underscores the increasing intersection between technological advancement and clinical implementation. These outcomes suggest that the field is increasingly oriented toward personalized, adaptive, and real-time mental health solutions supported by AI technologies.

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The geographical distribution and co-authorship by countries further emphasize the global as well as highly collaborative character of this field. In total, 21 countries satisfied the inclusion threshold for the co-authorship network analysis, collectively generating 73 inter-country collaborative connections. The United States stands out as the foremost contributor, producing 98 publications and accumulating 3,215 citations, with a total link strength of 51. It is subsequently followed by the United Kingdom, Australia, and China, each of which exhibits substantial publication output as well as pronounced levels of collaborative engagement and research productivity. These countries function as central hubs within the network, facilitating international partnerships and knowledge exchange. In contrast, countries such as India and China exhibit high publication output but relatively lower link strength, suggesting growing research capacity with opportunities for deeper international integration. Overall, these patterns confirm the significance of international collaboration in fostering both innovation and the broader spread of knowledge within AI-focused mental health research.

An important insight from this study is that the impact of research is not governed merely by the quantity of publications, but is also shaped by citation influence and collaborative engagement. Similar to patterns observed in other bibliometric domains, some countries and institutions with high publication counts do not necessarily achieve the highest citation impact, whereas others with fewer publications demonstrate greater influence through stronger collaboration networks and higher citation values. This reinforces the notion that research quality, interdisciplinary relevance, and visibility within the scientific community are critical factors in determining scholarly impact. The prominence of highly cited works integrating psychological theory and AI methodologies further illustrates the importance of producing conceptually robust and practically relevant research.

In conclusion, this study demonstrates that artificial intelligence in mental health interventions is a rapidly evolving and highly interdisciplinary field characterized by strong international collaboration and emerging technological innovation. The integration of publication trends, co-authorship networks, as well as keyword co-occurrence examination offers a holistic perspective on both the structural composition and developmental direction of the field. While substantial progress has been made in developing AI-based mental health solutions, key challenges, particularly those related to ethical considerations, data privacy, and clinical validation, remain underexplored. Future research should therefore focus on strengthening collaborative networks, advancing methodological rigor, and addressing ethical considerations to support the responsible and efficient deployment of AI-driven technologies. In a broader sense, the results underscore the significant transformative capacity of artificial intelligence in improving accessibility, tailoring interventions, as well as increasing the overall efficiency of mental health interventions on a global scale.

International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 11 Issue 63 (June 2026) PP. 601-618

Acknowledgements: The authors would like to express their sincere gratitude to IGSR Southern University College for providing the necessary resources and support throughout the course of this research. Special appreciation is extended to colleagues and peers who contributed valuable insights and constructive feedback, which greatly enhanced the quality of this paper.

Funding Statement: This research received financial support from IGSR Southern University College under the conference fund. The funding body had no role in the design of the study, data collection, analysis, interpretation of results, or the decision to publish this manuscript.

Conflict of Interest Statement: The authors declare that there is no conflict of interest regarding the publication of this paper. All authors have contributed to this work and approved the final version of the manuscript for submission to the International Journal of Education, Psychology and Counseling (IJEPC).

Ethics Statement: This study did not involve any human participants, animals, or sensitive data requiring ethical approval. The authors confirm that the research was conducted in accordance with accepted academic integrity and ethical publishing standards.

Author Contribution Statement: All authors contributed significantly to the development of this manuscript.

International Journal of Education, Psychology and Counseling
IJEPC
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