

The Evolution of Digital Well-Being Research in the Era of Artificial Intelligence and Digital Mental Health: A Bibliometric Analysis

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Abstract

Digital well-being has gained research attention alongside advances in artificial intelligence and digital mental health technologies. This study mapped the field's development through a bibliometric analysis of 422 Scopus articles published between 2020 and 2025, selected using predefined criteria. VOSviewer supported analyses of publication trends, citations, co-authorship, and keyword co-occurrence. Results showed substantial publication growth and strong connections among digital well-being, mental health, social media, and digital behavior. Prominent themes included psychological well-being and digital literacy, while smartphone addiction, screen time, internet addiction, emotional regulation, and artificial intelligence emerged as recent research topics. The United States and United Kingdom led publication output, with Social Sciences, Medicine, Computer Science, and Psychology dominating disciplinary contributions. These findings demonstrate the field's multidisciplinary development across psychological, social, health, and technological dimensions and identify potential directions for future research and emerging digital mental health practices.

Introduction

Digital transformation has fundamentally reshaped human interaction, work, learning, communication, and the ways individuals maintain their psychological well-being. The increasing intensity of digital technology use has contributed to the emergence of the concept of digital well-being, which refers to an individual's ability to engage with digital technologies in a healthy, balanced, safe, and adaptive manner without compromising mental health or social functioning (Büchi, 2024; Vanden Abeele, 2021). In recent years, digital well-being has become a global concern due to the widespread adoption of social media, smart devices, digital applications, and online platforms that influence individuals' psychological, emotional, and social quality of life. This trend has been further accelerated by the COVID-19 pandemic, which intensified society's dependence on digital technologies across various aspects of daily life.

The impact of digital technologies on psychological well-being is inherently ambivalent. On the one hand, digital technologies facilitate access to information, expand social support networks, enhance productivity, and support mental health services as well as distance learning. On the other hand, excessive technology use has been associated with increased stress, anxiety, loneliness, sleep disturbances, digital burnout, and social media and smartphone addiction (Montag & Elhai, 2020; Shankleman et al., 2021). Phenomena such as fear of missing out (FoMO), problematic smartphone use, doomscrolling, cyberbullying, and dependence on online validation further demonstrate that technological advancement does not necessarily translate into improved well-being, particularly among adolescents and young adults (Odgers & Jensen, 2020; Valkenburg et al., 2022). Furthermore, the growing adoption of artificial intelligence (AI)-based technologies has introduced new challenges related to ethics, data privacy, algorithmic bias, and information security in digital mental health services (Fiske et al., 2019).

These developments have encouraged the advancement of digital well-being as a framework for understanding and optimizing the relationship between humans and digital technologies. Within the fields of psychology and mental health, the concept of digital well-being has evolved beyond the simple regulation of screen time toward a more comprehensive understanding of the relationships among digital behavior, emotional regulation, psychological health, and social connectedness. Previous research suggests that the quality of digital interactions has a greater influence on well-being than the duration of technology use itself (Ophir et al., 2020). Consequently, contemporary discussions of digital well-being extend beyond limiting screen exposure and increasingly focus on how individuals can cultivate meaningful, healthy, and psychologically supportive digital experiences. This evolving perspective has become particularly relevant with the growing integration of artificial intelligence into various aspects of digital life.

The rapid advancement of AI has further expanded the scope of digital well-being research. The integration of AI into social media platforms, mental health applications, digital recommendation systems, psychological chatbots, and online learning environments has transformed the way individuals interact with technology (Alhuwaydi, 2024). In digital mental health services, AI enables early detection of psychological disorders, monitoring of digital behaviors, and the delivery of more personalized and adaptive interventions (Yulianita et al., 2025). AI-based applications are increasingly being utilized to support stress management, anxiety reduction, mindfulness practices, and online counseling services. Alongside these developments, scholarly interest in digital well-being has grown substantially, as evidenced by the increasing number of studies examining the relationships among digital technology, AI, and mental health (Soejanto et al., 2024). Research has expanded beyond investigating the negative consequences of technology use to include healthy digital behavior, digital literacy, online social support, digital interventions, and the development of more human-centered technological ecosystems. Themes such as digital mental health, social media addiction, online well-being, digital literacy, telehealth, and behavioral change illustrate the dynamic evolution of this research field in recent years.

Despite the increasing volume of publications on digital well-being, studies mapping the intellectual structure and research evolution of this field remain relatively limited. Most previous studies have focused on empirical investigations of the effects of digital media on mental health or evaluations of specific digital interventions. Comparatively little attention has been devoted to systematically examining publication patterns, scientific collaboration networks, dominant research themes, and the evolution of digital well-being research in the era of artificial intelligence and digital mental health. This gap makes it difficult for researchers to identify emerging themes, future research opportunities, and unresolved issues within the field. One approach that can systematically capture the development of a scientific field is bibliometric analysis. Bibliometrics is a quantitative method used to analyze scientific publications through publication output, citation patterns, collaboration networks, and keyword occurrences within academic literature (Donthu et al., 2021). This approach enables researchers to identify research trends, influential authors and journals, intellectual structures, and emerging research themes. In the context of digital well-being, bibliometric analysis is particularly valuable for understanding the evolution of research as digital technologies and artificial intelligence become increasingly embedded in everyday life (Hidayanti & Susanto, 2024). The use of bibliometric software such as VOSviewer facilitates the visualization of scientific relationships through co-authorship, citation, and keyword co-occurrence analyses, enabling the mapping of collaboration networks, thematic clusters, and emerging topics such as digital stress, AI-based mental health, problematic smartphone use, and emotional well-being in contemporary digital ecosystems (Eck & Waltman, 2020; Judijanto et al., 2024).

Based on these considerations, this study analyzes the evolution of digital well-being research in the era of artificial intelligence and digital mental health using a bibliometric approach. The analysis focuses on Scopus-indexed publications from 2020 to 2025, examining publication trends, author productivity, scientific collaboration patterns, influential journals, and the development of research themes through keyword analysis. Data were collected through a systematic process of identification, screening, and article selection based on predefined inclusion criteria. This study employs the Scopus database as the primary data source due to its broad multidisciplinary coverage and strong international reputation in scientific publishing. Bibliometric analyses were conducted using VOSviewer to generate network visualizations, including co-authorship analysis, citation analysis, and keyword co-occurrence analysis. Through this approach, the study is expected to provide a comprehensive overview of the development of digital well-being research while identifying future research opportunities and practical implications for digital mental health.

Methods

This study employed a quantitative bibliometric approach to analyze the development of scientific publications on digital well-being in the era of artificial intelligence (AI) and digital mental health (Passas, 2024). Bibliometric analysis was selected because it enables the systematic mapping of intellectual structures, research trends, scientific collaboration patterns, and thematic developments based on the characteristics of publications indexed in international databases (Donthu et al., 2021). Through this approach, the study provides a comprehensive overview of the evolution of digital well-being research over a specific period. The data were retrieved from the Scopus database, one of the most widely recognized international scientific databases with extensive multidisciplinary coverage. The literature search was conducted on March 3, 2026, using keywords related to digital well-being, digital wellness, online well-being, digital health behavior, and healthy digital behavior. The overall research procedure is illustrated in Figure 1.

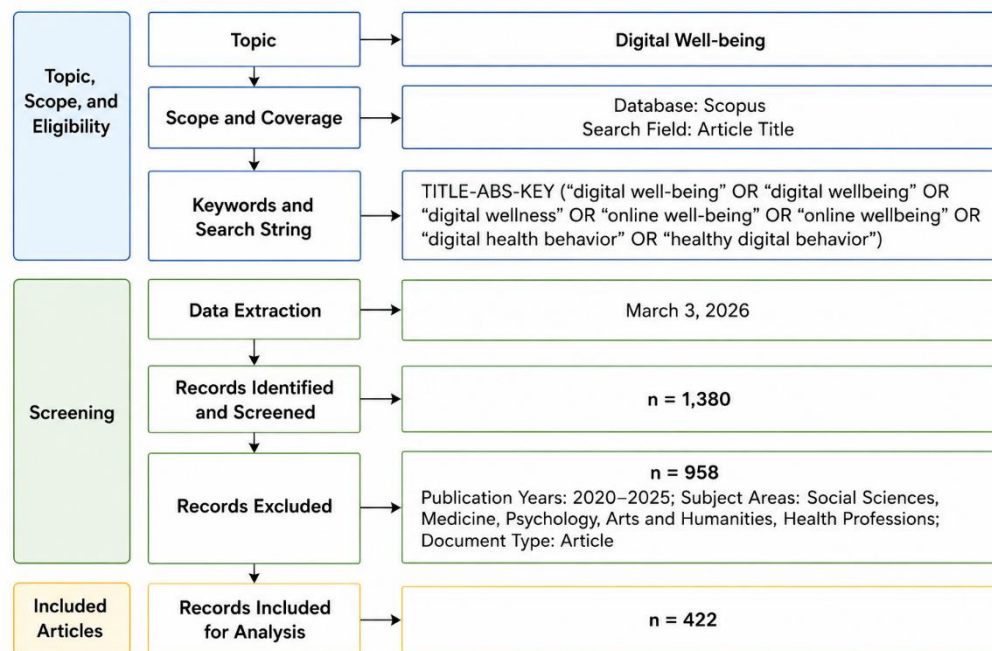


Figure 1. Research procedure

As shown in Figure 1, the study followed a systematic process consisting of identification, screening, and article selection stages. During the initial identification stage, a total of 1,380 publications were retrieved from the Scopus database. The records were subsequently screened according to predefined inclusion and exclusion criteria. The inclusion criteria comprised: (1) journal articles, (2) publications written in English, (3) articles published between 2020 and 2025, and (4) studies categorized within the subject areas of Social Sciences, Psychology, Medicine, Arts and Humanities, and Health Professions. In addition, the search was refined using relevant keywords, including digital well-being, mental health, digital mental health, social media, digital health, smartphone addiction, digital literacy, screen time, nomophobia, and behavioral change.

Following the screening process, 958 records were excluded due to subject-area mismatch, document type incompatibility, duplicate records, or lack of relevance to the research focus. After the final selection stage, 422 articles met the eligibility criteria and were included in the analysis. The selected records were exported in CSV and RIS formats to facilitate bibliometric analysis using VOSviewer version 1.6.20. The bibliometric analysis consisted of four main procedures: publication trend analysis, citation analysis, co-authorship analysis, and keyword co-occurrence analysis. Publication trend analysis was conducted to identify annual publication growth in digital well-being research from 2020 to 2025. Citation analysis was employed to determine influential articles, authors, and journals within the field. Co-authorship analysis was used to map collaboration patterns among authors, institutions, and countries, while keyword co-occurrence analysis was performed to identify dominant themes, thematic relationships, and emerging research directions in digital well-being research within the context of artificial intelligence and digital mental health.

Network visualization was generated using VOSviewer, which provides systematic and intuitive representations of bibliographic relationships through network visualization, overlay visualization, and density visualization features (Eck & Waltman, 2020). These visualizations enabled the identification of research clusters, keyword relationships, scientific collaboration networks, and emerging themes within the digital well-being literature. The findings of the bibliometric analyses were interpreted descriptively to explain the intellectual structure of the field, thematic developments, and future research opportunities. Through this approach, the study seeks to provide a comprehensive understanding of the evolution of digital well-being research while offering insights for future research and technology-based digital mental health practices.

Results

This study examined the scientific landscape of digital well-being research in the era of artificial intelligence and digital mental health using publications indexed in the Scopus database. Data were collected through a systematic identification, screening, and selection process based on predefined inclusion and exclusion criteria. The findings demonstrate a significant expansion of digital well-being research over recent years. Annual publication trend analysis revealed a steady increase in the number of articles published between 2020 and 2025, indicating growing scholarly interest in this field. The increasing volume of publications reflects the rising global concern regarding digital well-being amid the widespread adoption of digital technologies, social media, smart devices, and technology-driven mental health services.

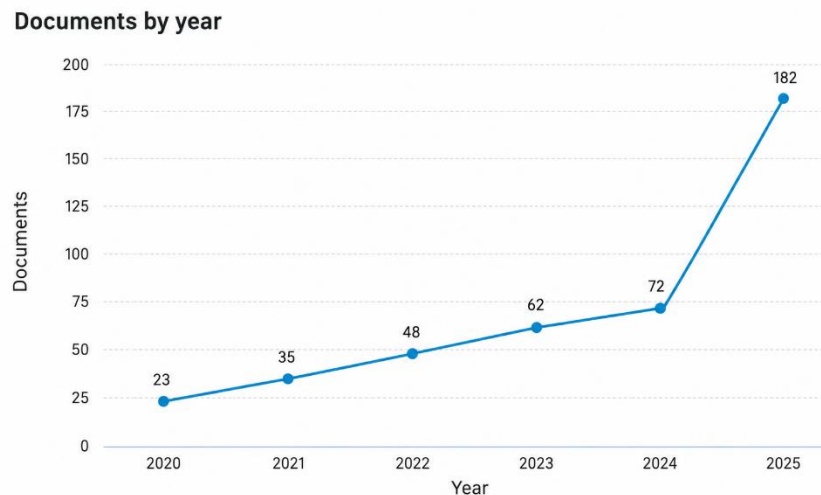


Figure 2. Digital well-being publications published between 2020 and 2025

As shown in Figure 2, the number of publications on digital well-being was relatively low in 2020, with a total of 23 documents. The number increased to 35 documents in 2021 and continued to rise to 48 documents in 2022 and 62 documents in 2023. The growth trend became more pronounced in 2024, reaching 72 documents, and peaked in 2025 with 182 documents. This increase indicates that digital well-being research has expanded considerably and has become an important focus within the fields of digital psychology, mental health, and technology-use behavior. The growing number of publications also reflects the expanding scope of research topics investigated within the field of digital well-being. This trend is evident from the network visualization analysis conducted using VOSviewer, which revealed strong interconnections among research topics across multiple disciplines. Based on metadata extraction, several highly frequent keywords were identified, including digital well-being, wellbeing, mental health, social media, psychology, digital wellness, screen time, smartphone addiction, digital health, artificial intelligence, and digital literacy. These keywords indicate that digital well-being research has evolved beyond psychological well-being alone to encompass digital behavior, social media use, mental health, and the application of intelligent technologies in everyday life.

As illustrated in Figure 3, the network visualization analysis generated several major clusters representing dominant research themes within the field of digital well-being. Each cluster reflects a distinct research focus while remaining interconnected within a complex scholarly network. The size of each node represents the frequency of

keyword occurrences, whereas the links between nodes indicate the strength of relationships among terms across scientific publications. Larger nodes and shorter distances between keywords indicate stronger conceptual connections among research themes. The keywords digital well-being and wellbeing occupy central positions within the network and exhibit strong connections with several related terms, including mental health, social media, digital wellness, psychology, screen time, and artificial intelligence. This finding suggests that digital well-being research has evolved into a multidimensional field encompassing psychological, social, behavioral, and technological dimensions. The green cluster is primarily associated with smartphone use, digital media, and user behavior within digital environments. Keywords such as smartphones, smartphone use, media use, digital media, Generation Z, and digital literacy are prominent within this cluster. These themes indicate substantial scholarly attention to digital technology use among younger generations and its relationship with psychological and social well-being. The red cluster predominantly focuses on mental health and psychological well-being. Keywords such as mental health, psychological well-being, emotional well-being, digital mental health, and physiological stress suggest that research within this cluster examines the psychological consequences of digital technology use, including digital stress, emotional well-being, and mental health outcomes among digital media users. The blue cluster represents research related to addictive behaviors and excessive smartphone use. Frequently occurring keywords include internet addiction, smartphone addiction, problematic smartphone use, screen time, nomophobia, and internet addiction disorder. The prominence of these terms indicates that digital addiction has become a major theme within digital well-being research, with particular emphasis on the psychological risks associated with uncontrolled technology use.

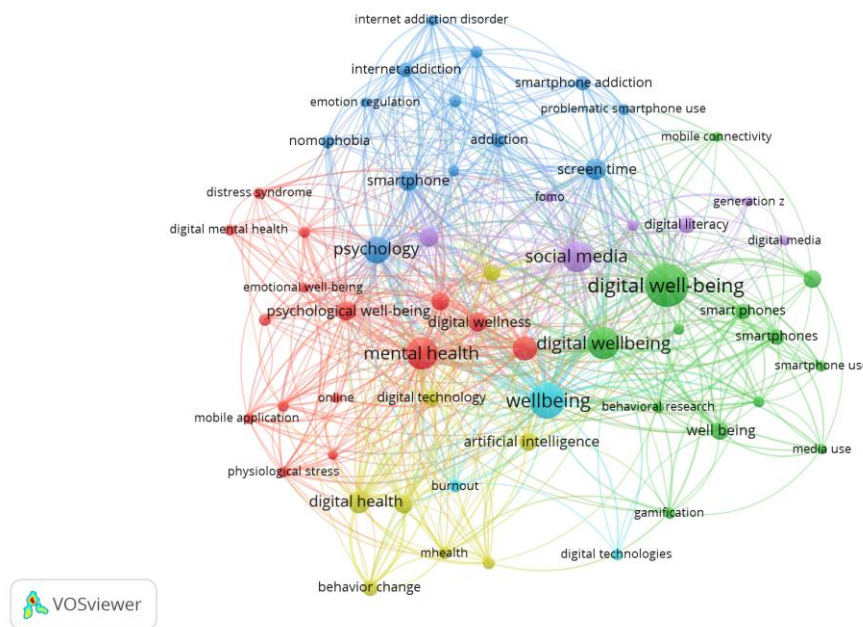


Figure 3. Network visualization generated using VOSviewer

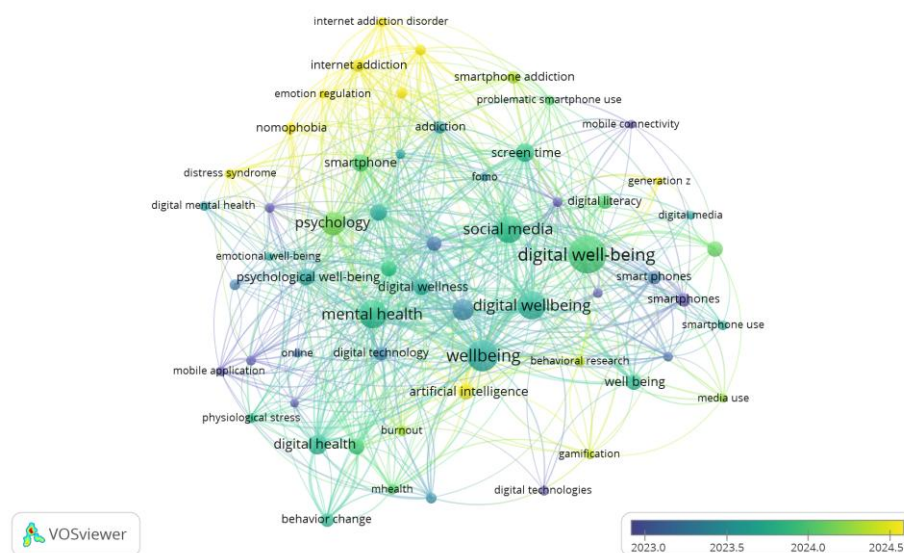
Meanwhile, the yellow cluster is primarily associated with the integration of digital health technologies and artificial intelligence in promoting digital well-being. Keywords such as digital health, artificial intelligence, behavior change, mHealth, and burnout suggest an increasing research interest in the use of intelligent technologies and digital health applications to support mental health management, behavioral interventions, and real-time monitoring of users' psychological conditions. The network visualization also reveals strong relationships among the keywords social media, mental health, and digital well-being. These connections indicate that social media has become one of the most extensively studied factors in digital well-being research, particularly regarding its influence on psychological outcomes, emotional regulation, social relationships, and technology-use behaviors in contemporary digital life. In addition to identifying dominant research themes, bibliometric analysis also enables the identification of scholars who have made significant contributions to the development of digital well-being research. Examining author productivity is important for recognizing key contributors who advance knowledge production, establish scientific collaboration networks, and promote emerging research directions related to digital well-being, mental health, and technological transformation. Therefore, the subsequent analysis focuses on author productivity based on publication output.

Table 1. Most productive authors based on publication output.

No	Authors	Publication Output
1	Ali, R.	8
2	Vanden Abeele, M.M.P.	7
3	Al-Thani, D.	5
4	Nguyen, M.H.	5
5	Büchi, M.	4
6	Dennis, M.J.	4
7	Aljuboori, D.	3
8	Gui, M.	3
9	McAlaney, J.	3
10	Meier, A.	3

Table 1 presents the most productive authors in the field of digital well-being research. Based on publication output, Ali, R. emerged as the most prolific author, contributing eight publications. This position highlights the author's significant role in advancing research on digital well-being, technology use, and their implications for mental health. Vanden Abeele, M.M.P. ranked second with seven publications, followed by Al-Thani, D. and Nguyen, M.H., each contributing five publications. The productivity of these authors indicates the presence of a core group of researchers who have consistently contributed to the development of digital well-being scholarship. The existence of such core authors suggests that digital well-being has evolved into a well-established research domain supported by an active academic community. Their sustained contributions have broadened the scope of the field by integrating perspectives on digital technology, user behavior, mental health, and psychological well-being.

Beyond identifying the leading contributors to the field, bibliometric analysis also enables the mapping of knowledge structures through the relationships among keywords appearing in scientific publications. Such mapping provides insights into the evolution of research directions and highlights themes that have attracted considerable scholarly attention within the digital well-being literature. To further examine the temporal development of research themes, the next analysis employs VOSviewer's overlay visualization.

**Figure 4.** Overlay visualization generated using VOSviewer

The overlay visualization presented in Figure 4 illustrates the temporal evolution of research themes based on the average publication year of each keyword. Colors ranging from blue to purple represent topics that emerged earlier in the literature, whereas green to yellow colors indicate more recent themes that have gained increasing scholarly attention in recent years. Keywords such as psychology, psychological well-being, mental health, and digital health appear in darker colors, suggesting that these topics have long served as the foundational themes of digital well-being research. In contrast, keywords such as digital literacy, screen time, smartphone addiction, internet addiction,

artificial intelligence, and emotional regulation are represented by brighter colors. This finding indicates a recent shift in research attention toward issues related to digital addiction, digital literacy competencies, the application of artificial intelligence, and emotional regulation within digital environments.

These developments suggest that digital well-being is no longer viewed solely as a state of psychological well-being associated with technology use. Rather, it has evolved into a broader concept encompassing individuals' abilities to manage digital behaviors, cope with the risks of technology addiction, and utilize intelligent technologies in healthy and productive ways. The emergence of artificial intelligence as a relatively recent research theme further indicates its growing importance in the development of digital mental health services and digital well-being initiatives. The changing research landscape is also reflected in the frequency and intensity of keyword occurrences within the scholarly network. Therefore, the next analysis employs density visualization to identify the most dominant and extensively investigated themes in the field of digital well-being.

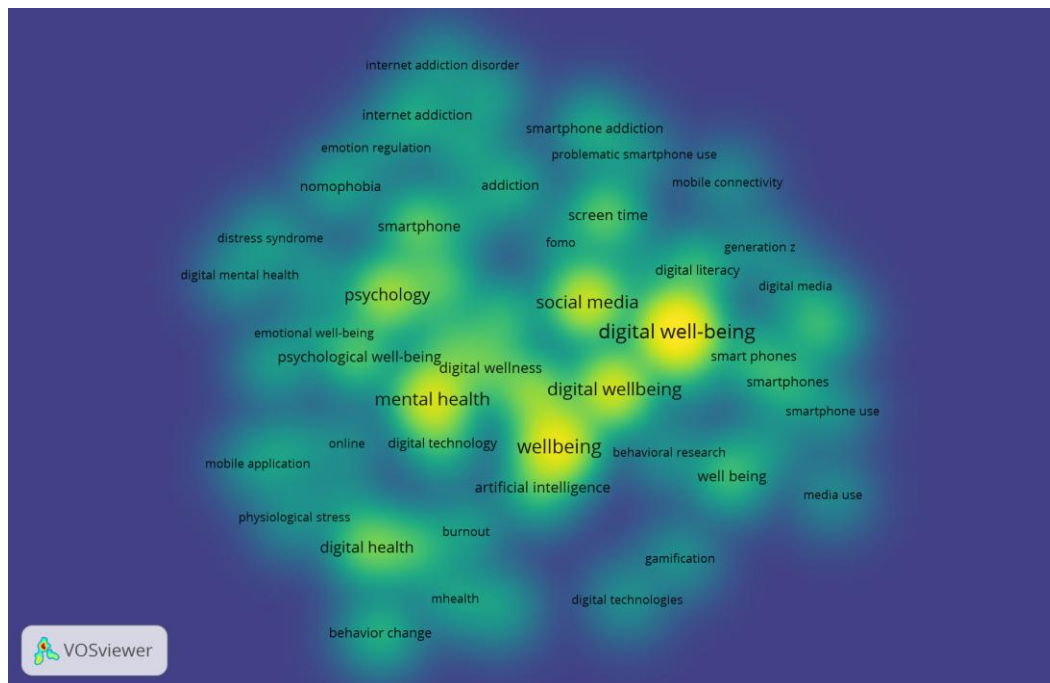


Figure 5. Density visualization generated using VOSviewer

Based on Figure 5, the keyword digital well-being emerges as the most dominant theme and occupies a central position within the research network. This keyword exhibits the highest density level compared with other themes, indicating that digital well-being represents the primary focus of the analyzed publications. In addition, the keywords wellbeing, social media, mental health, and psychological well-being appear in areas of high density, reflecting substantial scholarly interest in the relationship between digital technologies and individuals' psychological well-being. The density visualization also reveals several interconnected thematic groups. The left side of the map is dominated by keywords associated with psychological and mental health dimensions, including psychology, psychological well-being, digital mental health, and emotional well-being. The central area contains the core themes of digital well-being, wellbeing, and social media, highlighting their pivotal role in the knowledge structure of the field. Meanwhile, the right side of the map is characterized by themes related to digital technology use, including smartphones, smartphone use, digital literacy, and artificial intelligence.

These findings demonstrate that digital well-being research has evolved into an increasingly multidisciplinary field that integrates perspectives from psychology, health sciences, social sciences, and information technology. The prominence of themes related to mental health and social media further suggests that researchers remain primarily concerned with understanding how digital technologies influence individual well-being, both positively and negatively. To obtain a more comprehensive understanding of the global development of digital well-being research, the subsequent analysis focuses on the geographical distribution of publications across countries and regions.

Examining publication output by country is essential for identifying the nations that have made the most significant contributions to the advancement of digital well-being scholarship and for understanding the global landscape of research activity in this rapidly evolving field.

Figure 6 illustrates the distribution of digital well-being publications across countries and regions. The results indicate that the United States is the leading contributor, with a total of 62 publications. This dominance highlights the country's significant role in advancing digital well-being research, particularly in exploring the relationships among digital technologies, mental health, and societal well-being. The United Kingdom ranks second with 48 publications, followed by Canada with 24 publications, Australia and China with 22 publications each, and the Netherlands with 20 publications. Switzerland contributed 19 publications, while Italy, Spain, and Türkiye each produced 17 publications. This distribution suggests that digital well-being research remains concentrated in countries with strong research capacities, high levels of technological adoption, and well-developed digital infrastructures. Such conditions indicate that digital transformation and the widespread integration of technology into everyday life are key drivers of scholarly interest in digital well-being.

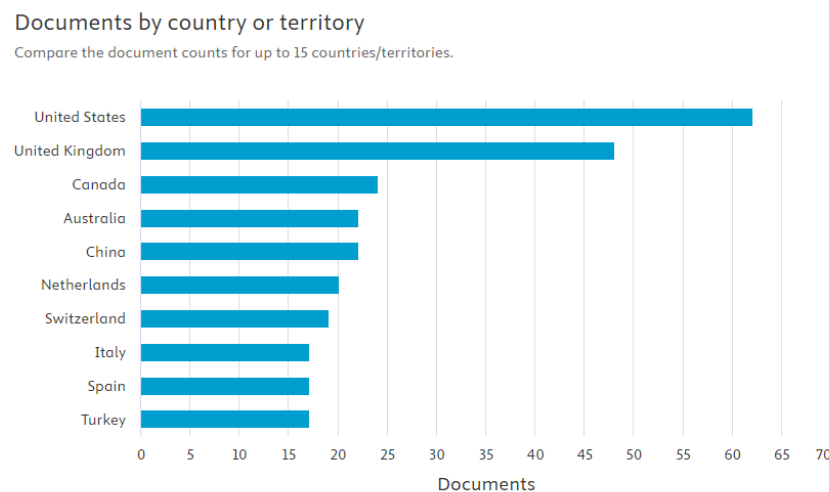
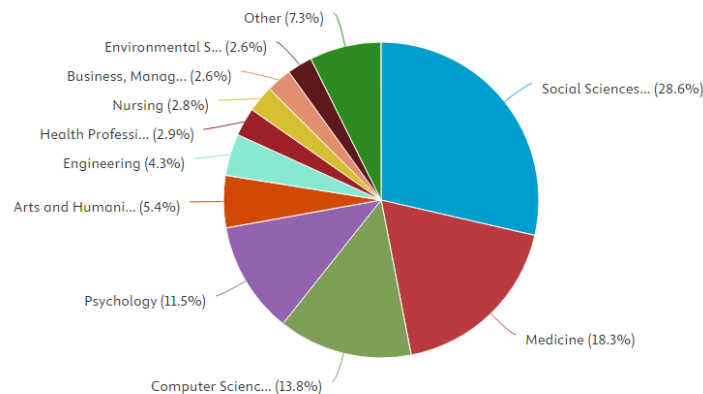


Figure 6. Distribution of publications by country

Notably, substantial contributions were also observed from Asian countries, particularly China and Türkiye. This finding demonstrates that digital well-being has emerged as a global research concern that transcends diverse social, cultural, and economic contexts. The increasing use of the internet, social media platforms, artificial intelligence, and digital devices has encouraged researchers worldwide to investigate the implications of technology for individual and societal well-being. Overall, the ten most productive countries in digital well-being research were the United States (62 publications), the United Kingdom (48 publications), Canada (24 publications), Australia (22 publications), China (22 publications), the Netherlands (20 publications), Switzerland (19 publications), Italy (17 publications), Spain (17 publications), and Türkiye (17 publications). The prominence of these countries reflects the rapid growth of digital well-being research in regions characterized by high levels of digital technology adoption and well-established research ecosystems.

In addition to revealing the geographical distribution of research activity, bibliometric analysis also provides insights into the disciplinary foundations of digital well-being scholarship. Therefore, the following analysis focuses on the distribution of publications across subject areas to identify the academic disciplines that contribute most substantially to the development of this field. Figure 7 presents the distribution of publications across subject areas. The results indicate that Social Sciences is the most dominant discipline, accounting for 187 publications or approximately 28.6% of the total dataset. This finding suggests that digital well-being has been extensively examined from perspectives related to human behavior, social interaction, digital literacy, social media use, and the broader societal impacts of digital transformation. The second-largest contribution comes from Medicine, with 120 publications (18.3%). The substantial representation of this discipline highlights the close relationship between digital well-being and both physical and mental health. Research within this field primarily focuses on the effects of digital technology use on psychological well-being and mental health, as well as the development of technology-based interventions designed to enhance individuals' quality of life.

Documents by subject area

**Figure 7.** Distribution of publications by subject area.

Computer Science ranks third with 90 publications (13.8%), followed by Psychology with 75 publications (11.5%). The strong contribution of these disciplines indicates that digital well-being research is increasingly influenced by advances in digital technologies and the need to better understand the psychological dimensions of technology use. Additional contributions were identified from Arts and Humanities (35 publications), Engineering (28 publications), Health Professions (19 publications), Nursing (18 publications), and Business, Management and Accounting (17 publications). The distribution of publications across multiple disciplines demonstrates the inherently multidisciplinary nature of digital well-being research. Digital well-being is no longer viewed solely as an issue of mental health or technology use; rather, it is increasingly recognized as a complex phenomenon shaped by the interaction of psychological, social, health-related, cultural, and technological factors. The integration of these diverse disciplinary perspectives enables the development of more comprehensive approaches to understanding and promoting well-being in digital environments.

The dominance of the social sciences suggests that researchers remain primarily concerned with human behavior in digital contexts. However, the substantial contributions from medicine, psychology, and computer science indicate a growing convergence between behavioral sciences and technological innovation. This trend is consistent with the emergence of new research topics identified in the keyword analysis, including digital literacy, artificial intelligence, digital health, smartphone addiction, and emotional regulation. Overall, the bibliometric findings demonstrate that digital well-being research has expanded rapidly and developed into a highly multidisciplinary field. The dominant themes revolve around the relationships among social media, mental health, psychological well-being, digital literacy, and digital technology use in everyday life. Furthermore, the emergence of topics such as artificial intelligence, screen time, smartphone addiction, internet addiction, and emotional regulation reflects a shift toward more specialized investigations of how digital technologies influence individual well-being.

The dominance of publications from the United States and the United Kingdom suggests that the development of digital well-being research continues to be strongly influenced by countries with high levels of technological adoption and well-established research infrastructures. At the same time, the distribution of publications across subject areas demonstrates that digital well-being has evolved into a multidisciplinary domain that integrates social sciences, health sciences, psychology, and information technology. These findings suggest that future research will increasingly focus on developing strategies, technologies, and policies that support individual well-being in response to the growing complexities of digital life, particularly in the era of artificial intelligence and digital mental health.

Discussion

The bibliometric analysis reveals that digital well-being has evolved into a multidisciplinary research field characterized by strong interconnections among social media, mental health, psychological well-being, and digital technologies. The prominence of keywords such as digital well-being, wellbeing, social media, and mental health indicates that scholarly attention remains largely focused on understanding how digital technology use influences

individuals' quality of life and psychological functioning. This finding is consistent with the systematic review conducted by [Bekalu et al., \(2023\)](#), which demonstrated that social media plays a significant role in shaping individual well-being through both positive mechanisms, such as enhanced social connectedness, and negative pathways, including social comparison, anxiety, and psychological distress associated with excessive use. Similarly, [Plackett et al., \(2023\)](#) found that interventions aimed at reducing or regulating social media use can improve users' mental well-being, although their effectiveness varies according to individual characteristics and patterns of technology engagement.

The strong linkage between social media and mental health observed in the network visualization suggests that digital well-being research continues to be shaped by ongoing debates regarding the psychological consequences of social media use. This relationship is unsurprising given that social media has become deeply embedded in everyday life, particularly among adolescents and young adults. On the one hand, social media provides access to information, social support, and opportunities for self-development. On the other hand, uncontrolled or excessive use may increase the risk of stress, anxiety, loneliness, and reduced psychological well-being. Consequently, contemporary digital well-being research is not only concerned with understanding the adverse effects of technology use but also seeks to identify strategies that promote healthier and more sustainable patterns of digital engagement.

Another notable finding is the emergence of digital literacy as one of the rapidly developing themes identified in the overlay visualization. This trend suggests a shift in scholarly attention from merely identifying the consequences of technology use toward fostering individuals' capacities to engage with digital technologies in a responsible and informed manner. Digital literacy is no longer viewed solely as a technical skill related to operating digital devices; rather, it encompasses the ability to evaluate information critically, manage digital identities, understand online risks, and cultivate healthy digital behaviors. This finding is supported by [Yeo et al., \(2024\)](#), who reported that digital mental health literacy interventions contribute positively to mental health knowledge, help-seeking behaviors, and psychological well-being. Therefore, digital literacy can be regarded as a protective factor that supports the development of digital well-being in increasingly complex digital environments. Therefore, digital literacy can be regarded as a protective factor that supports the development of digital well-being in increasingly complex digital environments..

The overlay visualization further indicates that smartphone addiction, internet addiction, and screen time have attracted increasing scholarly attention in recent years. This trend suggests that researchers are becoming more aware that the quality of technology use may be more important than the mere intensity or duration of use. The growing interest in digital addiction reflects concerns regarding the psychological consequences of excessive technology use, including sleep disturbances, reduced concentration, mental fatigue, and deteriorating social relationships. This finding is supported by [Ansari et al., \(2024\)](#), who reported that digital detoxification practices, characterized by the conscious reduction of digital device usage, can positively influence both subjective well-being and psychological well-being.

In addition to digital addiction, the findings reveal the emergence of artificial intelligence as one of the fastest-growing themes within digital well-being research. The increasing prominence of this topic reflects a shift in research paradigms from examining the consequences of technology use toward leveraging technology as a means of enhancing human well-being. Artificial intelligence is increasingly being applied in digital mental health services, including psychological chatbots, personalized recommendation systems, emotional monitoring tools, and early detection systems for mental health conditions. [Thakkar et al., \(2024\)](#) argued that artificial intelligence has considerable potential to improve the accessibility of mental health services, provide more personalized support, and facilitate continuous monitoring of psychological conditions. Nevertheless, these developments also raise important concerns regarding data privacy, algorithmic transparency, information security, and the ethical use of technology in mental health care.

The dominance of the United States and the United Kingdom in publication output indicates that digital well-being research remains concentrated in these countries within the analyzed dataset. Their substantial contributions may reflect established research capacities and digital ecosystems, although the present analysis does not directly examine the determinants of publication productivity. More broadly, digital transformation creates opportunities and risks across multiple dimensions of well-being, including health, education, social connections, and personal security ([Cheng et al., 2026](#)). The increasing contributions from countries such as Canada, Australia, China, and Türkiye suggest that scholarly interest extends across different national contexts. This development highlights the importance of cross-national and cross-cultural perspectives, consistent with international efforts to coordinate digital health development and integrate technological, organizational, and human resources ([Zhen et al., 2024](#)). From a disciplinary

perspective, the prominence of Social Sciences, Medicine, Computer Science, and Psychology highlights the interdisciplinary nature of digital well-being as a concept situated at the intersection of human behavior and technological advancement. These findings reinforce the view that digital well-being cannot be adequately understood through a single disciplinary lens, as its ethical and practical implications span individual, social, and institutional contexts (ElSayary et al., 2026). Social sciences contribute to understanding user behavior and the societal implications of technology, whereas psychology and medicine provide insights into mental health and well-being outcomes. At the same time, computer science and artificial intelligence contribute to the development of technological solutions designed to support user well-being. The integration of these disciplines suggests that future digital well-being research would benefit from approaches combining perspectives on human behavior, technology, and health.

These findings contribute to the conceptual development of digital well-being as an increasingly multidisciplinary and complex field of inquiry. The results suggest that digital well-being extends beyond mitigating the negative effects of technology use toward a broader framework encompassing psychological, social, health-related, and technological dimensions of life in digital environments. This interpretation is consistent with the conceptualization of digital well-being as a dynamic and subjective experience shaped by the interaction between individuals, devices, and contexts (Laitsou et al., 2025). The emergence of themes such as digital literacy, digital mental health, smartphone addiction, and artificial intelligence suggests an expansion of research attention from risk identification toward factors that may promote user well-being. These developments underscore the importance of conceptual models explaining the relationships among digital behavior, mental health, digital literacy, and AI-driven technologies. From a practical perspective, the findings offer insights for policymakers, educators, mental health professionals, and technology developers. The growing emphasis on digital literacy suggests that promoting digital well-being involves strengthening individuals' capacities to engage with technology critically, safely, and responsibly. Furthermore, AI-based conversational agents offer opportunities to expand mental health support, with meta-analytic evidence indicating benefits for psychological distress while also identifying limitations in the available evidence (H. Li et al., 2023). However, implementing such technologies requires careful consideration of data privacy, algorithmic transparency, patient autonomy, and user protection to support responsible integration into mental health services (Zhang & Pang, 2026).

Despite its contributions, this study has several limitations. The bibliometric analysis was based on data retrieved from a single database, which may have excluded relevant publications indexed elsewhere, given documented differences in coverage and citation completeness across major bibliographic databases (Chansanam & Li, 2025; Lim et al., 2024). In addition, the study focused primarily on the quantitative mapping of publication characteristics and thematic relationships rather than an in-depth examination of the theoretical and methodological content of individual studies. Accordingly, the identified networks and publication patterns should be interpreted as indicators of the structure of the literature rather than direct evidence of study quality, causal relationships, or intervention effectiveness (Handayani, 2027). Future research is therefore encouraged to consider multiple international databases, with appropriate deduplication and harmonization procedures, and to complement bibliometric mapping with systematic or integrative literature reviews that critically synthesize substantive findings. Meta-analysis may also be appropriate when sufficiently comparable empirical studies are available. Further studies should develop and test conceptual models integrating digital behavior, digital literacy, mental health, and artificial intelligence to inform more adaptive, inclusive, and human-centered digital ecosystems.

Overall, the findings suggest that digital well-being research has expanded from examining associations between technology use and psychological well-being toward a more multidisciplinary and intervention-oriented research agenda. The growing prominence of themes such as digital literacy, digital mental health, smartphone addiction, internet addiction, and artificial intelligence reflects the increasingly complex interactions between humans and digital technologies. These findings support understanding digital well-being as a multidimensional concept that extends beyond individual technology-use management to include the design and social organization of digital environments (Zhou et al., 2026). The emergence of artificial intelligence as a research theme also highlights opportunities to investigate digitally supported assessment and intervention, although effectiveness, implementation, and sustained engagement remain important research challenges (Angelov, 2026; Y. Li et al., 2024). Future studies should therefore evaluate adaptive and personalized systems while examining whether their design supports users' autonomy, competence, and relatedness, which are central to psychologically informed approaches to digital experience (Fernández Batanero et al., 2026). Consequently, developing and empirically testing frameworks that integrate digital behavior, digital literacy, mental health, and artificial intelligence represents an important research agenda for digital ecosystems that support human well-being.

Conclusions

This study mapped the development of digital well-being research in the context of artificial intelligence and digital mental health using Scopus-indexed publications. The findings indicate substantial growth and a multidisciplinary research landscape connecting social media, mental health, psychological well-being, and technology-use behaviors. Emerging themes, including digital literacy, technology addiction, screen time, emotional regulation, and artificial intelligence, suggest increasing attention to healthy and adaptive engagement with digital technologies. The United States and the United Kingdom emerged as leading contributors, while contributions from other countries reflect growing international interest. These findings provide a foundation for conceptual development and inform efforts to strengthen digital literacy, promote human-centered technology design, and integrate digital mental health services. However, reliance on Scopus and quantitative bibliometric mapping limits coverage and does not permit detailed evaluation of individual studies' theoretical contributions or intervention effectiveness. Future research should integrate multiple databases, systematic evidence synthesis, and cross-cultural empirical investigations to clarify how artificial intelligence and digital literacy can support digital well-being across diverse populations.

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Author Contributions

Parid Rilo Pambudi: Conceptualization, methodology, data curation, formal analysis, visualization, writing original draft preparation, and corresponding author. **Siti Arifah:** Literature review, validation, data interpretation, writing review and editing. **Nanda Alfian Kurniawan:** Methodology support, bibliometric analysis, visualization, and writing review and editing. **Nining Maizura:** Supervision, validation, critical review of the manuscript, and project administration. All authors have read and approved the final version of the manuscript.

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Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the research, authorship, and publication of this article.

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Ethical approval was not required for this study.

References

- Alhuwaydi, A. M. (2024). Exploring the role of artificial intelligence in mental healthcare: current trends and future directions—a narrative review for a comprehensive insight. *Risk Management and Healthcare Policy*, 1339–1348. <https://doi.org/10.2147/RMHP.S461562>
- Angelov, A. (2026). Artificial Intelligence in European Union Tax Administrations: A Comparative Assessment. *Journal of Risk and Financial Management*, 19(4). <https://doi.org/10.3390/jrfm19040295>
- Ansari, S., Iqbal, N., Azeem, A., & Danyal, K. (2024). Improving well-being through digital detoxification among social media users: A systematic review and meta-analysis. *Cyberpsychology, Behavior, and Social Networking*, 27(11), 753–770. <https://doi.org/10.1089/cyber.2023.074>
- Bekalu, M. A., Sato, T., & Viswanath, K. (2023). Conceptualizing and measuring social media use in health and well-being studies: systematic review. *Journal of Medical Internet Research*, 25, e43191. <https://doi.org/10.2196/43191>
- Büchi, M. (2024). Digital well-being theory and research. *New Media & Society*, 26(1), 172–189. <https://doi.org/10.1177/14614448211056851>
- Chansanam, W., & Li, C. (2025). KCU-BiblioMerge: A novel tool for multi-database integration in bibliometric analysis. *Iberoamerican Journal of Science Measurement and Communication*, 5(1), 1–16. <https://doi.org/10.47909/ijsmc.157>
- Cheng, M., Liu, A., & Li, R. (2026). The Impact of Digital Transformation on Public Health: A Multicountry Analysis. *Health and Social Care in the Community*, 2026(1). <https://doi.org/10.1155/hsc/2320652>
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285–296. <https://doi.org/https://doi.org/10.1016/j.jbusres.2021.04.070>
- Eck, N. J. Van, & Waltman, L. (2020). VOSviewer manual: Manual for VOSviewer version 1.6. 15. Leiden: Centre for Science and Technology Studies (CWTS) of Leiden University.
- ElSayary, A., Hojeij, Z., & Hadi, L. A. (2026). The association between ethical AI use and well-being among young adults in the UAE: a structural equation modeling approach. *Wellbeing, Space and Society*, 10. <https://doi.org/10.1016/j.wss.2026.100375>
- Fernández Batanero, J. M., Román Gravan, P., Fernández Cerero, J., & Montenegro Rueda, M. (2026). Digital training for teachers on the inclusion of students with autism spectrum disorder in secondary school, sixth form and vocational training. *International Journal of Developmental Disabilities*. <https://doi.org/10.1080/20473869.2026.2616729>
- Fiske, A., Henningsen, P., & Buyx, A. (2019). Your robot therapist will see you now: ethical implications of embodied artificial intelligence in psychiatry, psychology, and psychotherapy. *Journal of Medical Internet Research*, 21(5), e13216. <https://doi.org/10.2196/13216>
- Handayani, D. F. (2027). Mapping the intellectual landscape of assessment literacy in academic writing: A bibliometric review of Scopus publications (1997–2025). *Multidisciplinary Reviews*, 10(1). <https://doi.org/10.31893/multirev.2027004>
- Hidayanti, D. M., & Susanto, J. (2024). Tren Penelitian Penggunaan Artificial Intelligence dalam Manajemen Pemasaran Digital: Kajian Bibliometrik Vosviewers. *Jurnal Riset Manajemen*, 2(3), 98–106. <https://doi.org/10.54066/jurma.v2i3.2219>
- Judijanto, L., Rohmah, S., & Salfin, S. (2024). Analisis Bibliometrik Perkembangan Riset Digital Humanities. *Sanskara Ilmu Sosial Dan Humaniora*, 2(01), 43–54. <https://doi.org/10.58812/sish.v2i01.501>
- Laitsou, E., Katsianis, D., Xenakis, A., & Gerogiannis, V. C. (2025). Pacing the digital decade: Digital evolution and its impact on human well-being. *Telecommunications Policy*, 49(1). <https://doi.org/10.1016/j.telpol.2024.102868>
- Li, H., Zhang, R., Lee, Y.-C., Kraut, R. E., & Mohr, D. C. (2023). Systematic review and meta-analysis of AI-based conversational agents for promoting mental health and well-being. *Npj Digital Medicine*, 6(1), 236. <https://doi.org/10.1038/s41746-023-00979-5>
- Li, Y., Lee, K.-C., Bressington, D., Liao, Q., He, M., Law, K.-K., Leung, A. Y. M., Molassiotis, A., & Li, M. (2024). A Theory and Evidence-Based Artificial Intelligence-Driven Motivational Digital Assistant to Decrease Vaccine Hesitancy: Intervention Development and Validation. *Vaccines*, 12(7). <https://doi.org/10.3390/vaccines12070708>
- Lim, W. M., Kumar, S., & Donthu, N. (2024). How to combine and clean bibliometric data and use bibliometric tools synergistically: Guidelines using metaverse research. *Journal of Business Research*, 182. <https://doi.org/10.1016/j.jbusres.2024.114760>

- Montag, C., & Elhai, J. D. (2020). Discussing digital technology overuse in children and adolescents during the COVID-19 pandemic and beyond: On the importance of considering Affective Neuroscience Theory. *Addictive Behaviors Reports*, 12, 100313. <https://doi.org/10.1016/j.abrep.2020.100313>
- Odgers, C. L., & Jensen, M. R. (2020). Annual research review: Adolescent mental health in the digital age: Facts, fears, and future directions. *Journal of Child Psychology and Psychiatry*, 61(3), 336–348. <https://doi.org/10.1111/jcpp.13190>
- Ophir, Y., Rosenberg, H., Lipshits-Braziler, Y., & Amichai-Hamburger, Y. (2020). “Digital adolescence”: The effects of smartphones and social networking technologies on adolescents’ well-being. In N. Van Zalk & C. P. Monks (Eds.), *Online peer engagement in adolescence: Positive and negative aspects of online social interaction* (pp. 122–139). Routledge/Taylor & Francis Group. <https://doi.org/10.4324/9780429468360-8>
- Passas, I. (2024). Bibliometric analysis: the main steps. *Encyclopedia*, 4(2), 1014–1025. <https://doi.org/10.3390/encyclopedia4020065>
- Plackett, R., Blyth, A., & Schartau, P. (2023). The impact of social media use interventions on mental well-being: systematic review. *Journal of Medical Internet Research*, 25, e44922. <https://doi.org/10.2196/44922>
- Shankleman, M., Hammond, L., & Jones, F. W. (2021). Adolescent social media use and well-being: A systematic review and thematic meta-synthesis. *Adolescent Research Review*, 6(4), 471–492. <https://doi.org/10.1007/s40894-021-00154-5>
- Soejanto, L. T., Bariyyah, K., Ifdil, I., Andrianie, S., Setyorini, S., Ariyanto, R. D., & Bakar, A. Y. A. (2024). Exploring cultural intelligence in educational studies: a bibliometric perspective on global literature. *COUNS-EDU: The International Journal of Counseling and Education*, 9(1), 37–46. <https://doi.org/10.23916/0020240948410>
- Thakkar, A., Gupta, A., & De Sousa, A. (2024). Artificial intelligence in positive mental health: a narrative review. *Frontiers in Digital Health*, 6, 1280235. <https://doi.org/10.3389/fdgth.2024.1280235>
- Valkenburg, P. M., Meier, A., & Beyens, I. (2022). Social media use and its impact on adolescent mental health: An umbrella review of the evidence. *Current Opinion in Psychology*, 44, 58–68. <https://doi.org/10.1016/j.copsyc.2021.08.017>
- Vanden Abeele, M. M. P. (2021). Digital wellbeing as a dynamic construct. *Communication Theory*, 31(4), 932–955. <https://doi.org/10.1093/ct/qtaa024>
- Yeo, G., Reich, S. M., Liaw, N. A., & Chia, E. Y. M. (2024). The effect of digital mental health literacy interventions on mental health: systematic review and meta-analysis. *Journal of Medical Internet Research*, 26, e51268. <https://doi.org/10.2196/51268>
- Yulianita, S., Widodo, S., Elviani, U., Sari, A. P., & Barri, M. A. F. (2025). Dinamika Pemanfaatan Artificial Intelligence dalam Deteksi Dini Kesehatan Mental Peserta Didik Global 2019–2025. *Jurnal Pendidikan, Penciptaan Seni Dan Budaya*, 1(2), 62–72. <https://doi.org/10.62710/jpps.pffn50>
- Zhang, K., & Pang, H. (2026). How does risk information exposure affect AI-driven technology users’ privacy protection? Combining social amplification of risk framework and technology threat avoidance theory. *Technology in Society*, 84. <https://doi.org/10.1016/j.techsoc.2025.103104>
- Zhen, Z., Tang, D., Wang, X., & Feng, Q. (2024). The impact of digital technology on health inequality: evidence from China. *BMC Health Services Research*, 24(1). <https://doi.org/10.1186/s12913-024-12022-8>
- Zhou, J., Lu, Y., & Li, W. (2026). Human-centric sustainability in organizations: The role of GAI literacy in individual well-being and innovative performance. *Telecommunications Policy*, 50(8). <https://doi.org/10.1016/j.telpol.2026.103273>