Exploring the Role of Social Media in Mental Health Research: A Bibliometric and Content Analysis

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ABSTRACT
This research aimed to investigate the global development of social media and mental health research and analyze publishing trends within the esteemed Scopus and Web of Science (WoS) databases, shedding light on the growing significance of this interdisciplinary field for understanding the interplay between digital technologies and mental well-being. Leveraging SciNetPy, the study analyzed factors such as publication numbers, primary research themes, top countries, subject areas, frequently used author keywords, preferred sources, and institutional data. Visualization maps and content analysis were created using VOSviewer and Biblioshiny, respectively. The analysis encompassed 3,119 entries from the Scopus and WoS databases, revealing a notable upward trajectory in social media and mental health research. Psychology emerged as the most prominent subject area, with the United States being the most productive country. Keywords such as "social media," "depression," and "mental health" saw a significant surge in popularity during 2021 and 2022. This study offers readers and future researchers a comprehensive global perspective on key topics in social media and mental health, facilitating the structuring of data for the development of robust theories and practices in this domain.

Keywords: Bibliometric, Content analysis, Mental health, Social media, Scopus, Web of Science.

INTRODUCTION
Social media use has significantly increased as a result of it becoming a widely used platform by not only individuals but also corporations, celebrities, and international organizations. The arrival of social media platforms has engendered a momentous revolution in the way in which individuals interact and communicate within the modern digital sphere. The advent of social media platforms including but not limited to Facebook, Twitter, and Instagram has enabled seamless global connectivity for individuals, empowering them to foster relationships with associates, kin, and even unknown persons.[¹] The pervasive nature of connectedness in contemporary culture has engendered significant transformations in both interpersonal interactions and broader societal domains.

Social media has a global reach, attracting a substantial user base. Research indicates that a majority of the students were frequent users of social media and visited platforms daily or several times a day.[²] Furthermore, Adolescents’ experiences with leisure-related smartphone use revealed that smartphones were central in their lives, used to alleviate boredom during unstructured leisure time, and offered low-commitment leisure opportunities for youth to relax and interact with their friends.[³] The prudent utilization of social media has been found to result in numerous advantageous and beneficial psychosocial consequences. The preceding factors encapsulate amplified social assistance,[⁴] enriched caliber of companionships,[⁵] heightened degrees of gratification,[⁶] and diminished degrees of isolation amidst elderly individuals.[⁷]

Nevertheless, while the moderate use of social media does not impede general functioning or psychological welfare, adverse consequences associated with social media usage have been investigated concerning excessive and problematic behaviour.[⁸] Previous studies exploring the detrimental consequences linked to the utilization of social media have revealed that the presence of problematic social media usage can result in a decline in an individual’s psychological welfare and overall physical condition.[⁹,¹⁰] The impact of social media on mental health has emerged as a prominent facet of societal dynamics. There has been an increasing apprehension regarding the influence of prolonged engagement with these platforms on the psychological well-being of individuals.[¹¹] The continuous exposure to carefully selected and idealized representations of others’ lives might result in emotions of inadequacy, comparison, and potentially even...
sadness. The importance of mental health in comprehensive well-being preservation is not crucial, and there is no need for individuals or society to address any potential negative outcomes.

The exploration of the effect of social media on mental health investigations holds significant significance, as it facilitates the recognition of specific mechanisms through which social media impacts mental wellness. Subsequently, this acquired knowledge can be utilized to facilitate the formulation of interventions and strategies aimed at alleviating any adverse consequences and fostering favorable mental well-being within the context of the digital era. Moreover, gaining a thorough understanding of this correlation may yield a more all-encompassing comprehension of how technology and media affect our overall psychological welfare. The intention of this investigation attempt is to conduct a bibliometric scrutiny to explore the current compilation of literature concerning the impact of social media on psychological well-being. The aim of this investigation is to furnish a thorough evaluation of the current state of knowledge on this topic by examining the tendencies, configurations, and inadequacies that are observable in the research. This analysis has the potential to discover crucial study areas that necessitate additional exploration and shed insight on prospective directions for future investigations. There are four research questions, including:

1. How has the publication output on mental health and social media evolved over the past decade? What are the key factors driving this growth?

2. What are the dominant subject areas and research themes within the fields of mental health and social media? How have they changed over time?

3. Which nations have made the most significant contributions to the field of mental health and its intersection with social media in terms of research?

4. How do authors frame their research in mental health and social media through the use of keywords?

**METHODOLOGY**

Bibliometric analysis is essential for identifying research gaps and potential directions. Therefore, the present bibliometric analysis aims to examine the publication trends to provide potential readers and other researchers with an intriguing insight into the research on social media on mental health. The keywords used are: "social network" OR "Social media" OR "Facebook" OR "Instagram" OR "Twitter" OR "LinkedIn" OR "TikTok" AND "Mental Health" OR "psychological well-being" OR "Mental Disorder" OR "Mood Disorder" OR "Depression" OR "affective disorder" OR "Affective Symptom" OR "Depressive OR "psych" OR "anxiety" OR "Stress" OR "Psychological."

**Datasets retrieval and analysis**

ScientoPy performed data pre-processing by merging and removing duplicate records from Scopus and WoS datasets prior to analysis, ensuring a comprehensive and non-redundant data set for bibliometric analysis. ScientoPy carried out data pre-processing by combining the Scopus and WoS data sets and deleting duplicate records before analyzing the data sets. This ensured that the bibliometric analysis was based on a thorough and non-redundant data set. Consequently, ScientoPy presents researchers with a convenient and efficient manner of executing this pre-processing step, thereby saving valuable time and effort. The pre-processed outcomes are depicted in Table 1.

Moreover, the amalgamation of VOSviewer and Biblioshiny presented further abilities for formulating bibliometric networks and web-based bibliometric analysis, respectively. The pre-processed data was employed to address RQ1 and RQ3 through ScientoPy analysis, whereas RQ2 was tackled using VOSviewer, and RQ4 and RQ5 were resolved through performance analysis in Biblioshiny. Please refer to the study framework (Figure 1).

**RESULTS**

**Publication output**

The publication output on mental health and social media has shown a noticeable increase over the years, as recorded in both the WoS and Scopus databases (Figure 2). The research activity in this area began with minimal publications in the mid-1960s, with only one publication recorded in 1965 and no publications in 1966 and 1968. Since 1977, there has been a gradual yet consistent increase in the quantity of published works, with a more notable surge occurring during the current century.

Alongside the growing publication output, the Total Citations (TC) of these publications have also witnessed a substantial increase. Despite the fact that the initial publications showed comparatively low citation counts, the combined citations experienced a significant increase from the latter half of the 1980s and underwent a marked escalation in the 2000s. This trajectory has persisted into the present decade, attaining a zenith in the total citations recorded in the year 2020.

**Most Dominant Subject Areas and Research Themes**

Figure 3 provides valuable insights into the dominant subject areas and research themes within the field of mental health and social media. Among the various disciplinary domains, the field of psychology has exhibited the most salience, evinced by the preponderance of publications generated over time. With respect to mental health and social media research, psychology has consistently displayed a significant presence, as evidenced by the gradual increase in the number of publications produced over time. In recent times, there has been a considerable upsurge
Table 1: The pre-processed results.

<table>
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<td>Omitted papers by document type</td>
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Figure 1: The Study Framework.
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in research outcomes, resulting in a pinnacle of 107 publications during the year 2021.

Similar to psychology, psychiatry’s research output has displayed a steady increase over the years, with a peak of 62 publications in 2021. This indicates the significance of psychiatric perspectives in examining the impact of social media on mental well-being. Furthermore, the domain of computer science has rendered remarkable contributions to the discipline. Despite the relatively scant number of computer science publications in the past, it has perseveringly burgeoned over time, culminating in an apex of 71 publications in 2022.

The field of public, environmental, and occupational health has also actively engaged in mental health and social media research. Although the quantity of literature in this particular field has exhibited a slightly lesser quantity compared to psychology and psychiatry, it has presented an inclining tendency, culminating in an apex of 51 publications in the year 2023. Additionally, healthcare sciences and services form another pertinent subject matter that has contributed to research on mental health and social media. The number of publications in this area has experienced fluctuation over the years, but reached a pinnacle of 33 publications in the year 2023, which indicates persistent enthusiasm in comprehending the intersection of social media and healthcare practices and services concerning mental health.

Moreover, the field of communication has contributed to the evolving research landscape on mental health and social media. The quantity of publications in this particular domain has demonstrated a consistent increase over the course of time, and ultimately peaked at 23 publications in 2021. Alongside this, numerous other subject areas such as medical informatics, engineering, business and economics, information science, and library science have also made commendable contributions towards comprehending the dynamics of mental health and social media. While their publication count may be relatively lower than the more dominant subject areas, their participation highlights the interdisciplinary nature of research within this field.

**Top Contributing Countries to Research on Mental Health and Social Media**

Figure 4 reveals the top 10 countries actively contributing to research on social media and mental health through the total number of published documents. The United States leads with 962 published documents, showcasing its pivotal role in shaping knowledge in this field. China follows closely with 356 publications, demonstrating its growing interest and engagement in this critical area of study. The United Kingdom holds the third position with 292 published documents, reaffirming its substantial contribution to global research on mental health and social media. India, Australia, Germany, Canada, South Korea, Spain, and Italy also actively participate, with each country...
making significant research contributions ranging from 87 to 208 published documents.

Content Analysis for Author’s Keywords

In research on mental health and social media, certain keywords appear with high frequency, indicating the prevalent themes and areas of focus for researchers (See Figure 4a and 4b). "Social media" emerges as the most frequently used keyword with 930 occurrences, highlighting its central role in the field of study. "Depression" is the second most common keyword with 567 occurrences, signifying its prominence as a critical mental health concern in the context of social media use. Similarly, "mental health" appears as another prominent keyword with 514 occurrences.

While, by Using the VOSviewer, the occurrence analysis shows that the mapping from 2016-2021 overlays keywords. Among the most frequently used author keywords are "Social Media" with 936 occurrences, "depression" with 571 occurrences, and "Mental health" with 514 occurrences.

DISCUSSION

The publication’s output on social media and mental health has shown a noticeable increase over the years. Several factors can be attributed to the observed growth in both publication output and total citations. Initially, there is a rising consciousness regarding topics concerning mental health, and an increasing realization of the deep influence of social media on mental wellness. Accordingly, analysts have been prompted to undertake exhaustive research into the link between mental wellness and social networking. As posited by a meta-analysis, social media engenders a sweeping impact on an individual’s self-perception, mood, and social relationships, as well as in politics, organizations, and psychiatric illnesses. The investigation also suggests that longitudinal research must be pursued to acquire a more profound grasp of the influence of social media on mental health. Secondly, technological advancements have been instrumental in facilitating more research in this domain, through enhancements in data collection and analysis techniques, and the greater accessibility of social media data through APIs and web scraping.

Furthermore, investigations pertaining to mental health and social media frequently require the cooperation of scholars from multiple disciplines, thus engendering a wider range of perspectives and more all-encompassing analyses. The potential implications of social media on mental health for policymaking and society have also driven researchers to explore this field further. Furthermore, the elevated acknowledgment of research pertaining to mental health, along with the broadened scope of funding prospects, has stimulated an inclination among researchers to explore this field. As further supported, previous studies agreed that social media appears to be an effective and economical recruitment tool for mental health research. Lastly, the burgeoning ubiquity of social media usage worldwide is postulated to have accentuated the desire to scrutinize its effect on mental health. It is imperative to underscore that these conclusions are predicated on the dataset proffered and may fluctuate contingent on the factual data attainable in the WoS and Scopus databases. Further research and data validation would be necessary to offer more accurate and comprehensive insights into the trends and factors driving the growth of mental health and social media research.

In terms of dominant subject areas and research themes, psychology emerges as the most prominent, exhibiting the highest number of publications over the years. The domain of psychology has demonstrated an unwavering impact on social media and mental health exploration, as evidenced by a progressive escalation in the quantity of publications over the years. The enduring focus on psychology underscores its crucial role in understanding the complex interplay between mental health and social media.
social media. In addition, the most preferred topics related to psychology are personality psychology, experimental psychology, psychological risk factors, and developmental psychology. [19]

Overall, the findings reveal a diverse and dynamic research landscape on social media and mental health, with psychology and psychiatry consistently leading the research output. The increasing interest from various subject areas underscores the significance of understanding the intersection between mental health and social media from multiple perspectives. The implementation of a multidisciplinary method is an imperative factor in the advancement of understanding and the creation of all-encompassing plans to proficiently confront the mental health obstacles that emerge in the domain of social media utilization.

In terms of top contributing countries, findings revealed that the United States (USA) has established significant research collaborations with various countries in the field of mental health and social media. Among these collaborations, China emerges as the leading partner, with the USA engaging in eight joint research efforts with Chinese researchers. Canada closely follows six collaborative projects, indicating a strong research partnership between the two North American countries. Australia also features prominently, having collaborated with the USA in four instances. Moreover, there have been four research collaborations each with India, Sweden, and the United Kingdom, showcasing the USA’s engagement with diverse global partners. Additionally, the USA has participated in two collaborative projects each with Bangladesh, Germany, Hong Kong, and Italy, further highlighting its efforts to foster international research networks in the domain of mental health and social media. The joint endeavors indicate the United States of America’s steadfast dedication to the promotion of comprehension of the interaction between mental well-being and social media on a worldwide level, augmenting the expanding corpus of knowledge in this crucial domain of inquiry.

The United Kingdom (UK) has demonstrated a zealous and proactive engagement in numerous research collaborations with diverse nations that focus on the pertinent issue of mental health and its correlation with social media. Notably, the UK has collaborated with Canada four times, indicating a strong research partnership between these two countries in exploring the intersection of mental health and social media. Furthermore, Sweden is another prominent research collaborator, with three joint efforts alongside the UK. Italy follows with two collaborations, underscoring a shared interest in investigating the effects of social media on mental well-being. Furthermore, the United Kingdom has engaged in collaborative efforts with a multitude of nations including Australia, Bangladesh, Egypt, Greece, Hong Kong, Iran, and Ireland, each in a singular research endeavor, showcasing the United Kingdom’s unwavering dedication to cultivating a diverse and expansive international research network in this crucial realm of inquiry. These collaborative endeavours exemplify the UK’s active involvement in advancing knowledge on mental health and social media, contributing to a comprehensive global understanding of the subject matter.

In research on social media and mental health, the analysis of author keywords reveals the top three frequently used terms: "social media," "depression," and "mental health." The high occurrence of the keyword "Social Media" emphasizes its paramount importance in the field of study. Considering the notable sway that social media platforms wield over modern communication and information dissemination, it is hardly surprising that they have become significant arenas capable of impacting the mental health and well-being of individuals. Researchers have extensively examined diverse facets of social media, including its possible advantages and hazards, as well as its function in shaping mental health consequences.

Next, the high occurrence of the keyword "Depression" underscores the concern regarding the relationship between social media use and mental health, particularly depression. In recent times, there has been an escalated apprehension regarding the plausible detrimental influence of social media on mental well-being. A multitude of studies have delved into the correlation between excessive usage of social media, cyberbullying, social comparison, and the peril of depression. It is noteworthy that a particular systematic review has ascertained that scrutinizing social media profiles on prevalent platforms such as Facebook, Twitter, and Instagram could serve as a legitimate approach in recognizing depression. The review included 15 relevant articles that identified social media markers such as the number and content of messages, linguistic variability, and follower patterns that differed between depressed and non-depressed individuals.

The keyword "Mental Health" reflects the broader interest of researchers in studying the overall implications of social media engagement on mental well-being, encompassing various issues like anxiety, stress, self-esteem, loneliness, and well-being. There exists an expanding corpus of literature that investigates the impact of social media usage on mental health facets. Notably, research has demonstrated that the overuse of social media may be linked to sentiments of isolation and unease. Furthermore, antecedent studies have verified a favorable correlation between addiction to mobile games or the internet and social anxiety, melancholy, and solitude.

The abundance of these words underscores the crucial role of exploring the interaction between social media and mental well-being. Scholars are currently engaged in exploring the possible constructive and deleterious ramifications of social media employment, with a specific emphasis on depression and the more extensive mental health ramifications. Given that social media is still evolving, it is imperative to comprehend its effects on psychological welfare and devise tactics to foster favorable online encounters and mental health.
CONCLUSION
In conclusion, our comprehensive bibliometric and content analysis has provided valuable insights into the intricate relationship between social media and mental health. The prevalence of the top three keywords, namely "social media," "depression," and "mental health," highlights their crucial significance in the research landscape, indicating the heightened interest among scholars in this domain. The results emphasize the noteworthy influence of social media platforms on individuals' psychological well-being and confirm the necessity of further exploring this subject. Our assessment of the content exposed a considerable emphasis on comprehending the possible advantages and disadvantages linked with social media usage, alongside its function in shaping outcomes regarding mental health. In addition, the scrutiny underlined the escalating concern regarding the unfavorable consequences of using social media on psychological health, specifically concerning depression. These results signal the need for persistent endeavors to craft evidence-grounded interventions to handle and alleviate the potential unfavorable impacts of social media on mental health.

Furthermore, the investigation has revealed a growing curiosity in exploring diverse psychological health facets in the realm of social media involvement, encompassing apprehension, tension, self-regard, and isolation. This more comprehensive approach demonstrates an escalating cognizance of the multidimensional influence of social media on mental wellness that goes beyond the boundaries of depression. By presenting a comprehensive outline of the research landscape on social media and mental health, this inquiry imparts to the already existing body of knowledge in this arena. The enlightenment obtained from this scrutiny can lay the groundwork for forthcoming research campaigns, steering scholars and practitioners in their endeavors to endorse affirmative digital experiences and enrich mental well-being in this digital era.

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CONFLICT OF INTEREST
The author declares that there are no significant competing financial, professional, or personal interests that might have affected the performance or presentation of the work described in this manuscript.

ABBREVIATIONS
COVID-19: Coronavirus disease 2019; WoS: Web of Science; AGR: Annual Growth Rate; ADY: Average Daily Yield; PDLY: Percentage of Documents in Last Years.

AVAILABILITY OF DATA AND MATERIALS
Scopus and Web of Science (CSV files), ScientoPy, VOSviewer and Biblioshiny were used as study materials.

AUTHORS’ CONTRIBUTION
AA conceptualized the study design, contributed to data analysis, interpreted the results, drafted the manuscript, and approved the final copy.

REFERENCES


