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Exploring the interconnection of social media, mental health and youth: A bibliometric analysis

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ABSTRACT

This study explores social media, mental health, and youth interconnection and proposes potential future research directions. Utilising bibliometric analysis, we examined a selected set of 58 papers from the Scopus database, focusing on the study conducted between 2015 and 2022 that explored the interconnection of social media, mental health, and youth. We gained insights into the most significant contributions in this domain by assessing citations, publication locations, relevance within the research network, and influential articles and authors. Additionally, we conducted a thorough analysis of topics, identified barriers to expansion discussed in the literature, and recommended potential avenues for further investigation. The data was processed using the Publish or Perish software, while the researchers used a VOS viewer for data visualisation. Statistical analysis was performed using Microsoft Excel. The study presents a comprehensive bibliometric analysis, including trends in publication growth, research output, and citation analysis. Our search yielded 58 documents, with an increasing trend observed in studies on social media, mental health, and youth. English dominated most research papers, primarily published in journals and conference proceedings. The writers Moreno, M.A., Nicholas, J., Twenge, J.M., and Vishwakarma, D.K. are recognized as the most productive authors. The United States has emerged as the leading nation in publishing output. The survey lists the most significant academic centres, such as Florida State University, California State University, Fullerton, and the University of Pittsburgh School of Medicine. Two significant thematic clusters are revealed by keyword analysis: one focusing on the effects of the COVID-19 pandemic, internet use, and depression on young people's mental health, and the other investigating the relationships between elements like depressive symptoms, suicide, relationships, and social media use. The study suggests that theoretical frameworks like Social Cognitive Theory (SCT) and the Transactional Model of Stress and Coping can aid in understanding the mechanisms through which social media impacts

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mental health outcomes among youth. The practical implications of this analysis include the need for targeted interventions and support systems, such as digital literacy programs. The study underlines the necessity for continued research to improve our comprehension of how social media affects young people's mental health and to guide the creation of efficient interventions and regulations.

INTRODUCTION

The use of social media has dramatically increased in the current era, and researchers have begun to explore the consequences of this phenomenon on the mental health of young individuals (Mahmood et al., 2020). Young people's lives now revolve entirely around social media. Indeed, a recent study (Emily et al., 2022) revealed that 95% of youngsters utilise social media. Social media can help young people connect with friends, family, and other valuable resources, but it can also harm their mental health. Studies have shown a significant relationship between the use of social media and depressive symptoms among children and adolescents (Gupta et al., 2022).

Concerns about the effects of social media on youth mental health have led to calls for further research in this area. This bibliometric examination explores the interplay among social media, youth, and mental health by scrutinizing the current literature. This analysis emphasizes recognising pivotal research inquiries, patterns, and voids in the existing literature.

This research utilised bibliometric analysis through Microsoft Excel 2013 to compute the occurrence and proportion of published materials and generate relevant charts and graphs. Additionally, VOSviewer (version 1.6.15), a tool for creating citation maps from established databases, was employed, alongside Harzing's Publish or Perish software, to determine citation metrics. In accomplishing this, the analysis is set to enrich comprehension regarding the correlation between the usage of social media platforms and the mental health of the youth demographic.

LITERATURE REVIEW

This section provides a summary of the literature written about the impact of social media on the mental wellness of youth and the role that youth play in the relationship between social media and mental health. A growing amount of evidence connects youth use of social media to mental health issues. For instance, a study produced by Johns Hopkins University Bloomberg School of Public Health (2019) indicated that teenagers who used social media for more than three hours per day were likelier to exhibit depressive and anxious symptoms. According to a study by Twenge et al. (2018), young individuals who use social media more frequently self-harm and have suicidal thoughts.

Social media can also promote social comparison, which is comparing oneself to others. This can lead to feelings of inadequacy and low self-esteem, especially when young people compare themselves to unrealistic images and standards often portrayed on social media (Sagrera et al., 2022). Youth can be exposed to various harmful content on social media, including cyberbullying, body shaming, and unattainable beauty standards. Depression, low self-esteem, and feelings of inadequacy might result from this. For instance, Janna (2018) indicated that 41% of kids felt pressured which seemed inevitable because of social media and 60% of teens had witnessed someone being bullied online. According to Nixon (2014), cyberbullying and harassment can have a serious impact on mental health and happen on social media.

Social media use can also disrupt sleep patterns. The blue light emitted from screens can interfere with the production of melatonin. This hormone helps regulate sleep, leading to problems falling asleep and

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staying asleep, which can contribute to mood disorders (Silvani et al., 2022). In addition, excessive usage of social media can also foster addictive behaviours because social media can be highly stimulating and rewarding, leading people to use it more and more. This can have a negative impact on mental health, as it can lead to problems such as anxiety, depression, and sleep deprivation (Woods & Scott, 2016). Furthermore, social media reduces face-to-face interaction, which can lead to loneliness and isolation and have a negative impact on mental health (HelpGuide.org, 2023).

It is crucial to remember that not all young people who use social media experience detrimental effects on their mental health. Personality and coping skills are likely to play a role in the impact of social media on mental health, among other variables. Harmful social media content is more likely to affect some young people than others. Their mentality and ways of dealing are probably to blame for this. For instance, social media content that repeats negative thoughts and feelings may have a more significant detrimental impact on young people who are already dealing with mental health issues (Popat & Tarrant, 2023).

Social media's effects on mental health might also vary depending on how much time is spent on it. Young people who use social media frequently are more likely to encounter unpleasant information and social comparisons. As a result, one may experience despair, low self-esteem, and feelings of inadequacy (Jan et al., 2017). The impact on mental health can also vary depending on the social media sites. For instance, social media sites that emphasize comparison, like Instagram, might be more likely to harm mental health than sites that emphasize connection, like Facebook (Limniou et al., 2022). Another factor to consider is the nature of the interactions on social media. According to Elgar et al. (2014), young people who engage in cyberbullying or who frequently receive critical comments on their social media posts are more likely to suffer from bad mental health effects.

It is crucial to remember that not all social media usage is detrimental. In truth, social media can improve the lives of young people when utilized responsibly (Janna, 2018). For instance, social media can be used to communicate with loved ones, discover new information, and express oneself artistically. Understanding the complexities of this interplay between social media and mental health is essential for developing evidence-based strategies to support the well-being of young individuals in the digital age. Consequently, analysing the existing research landscape is crucial to identifying the key themes, trends, and gaps in this domain.

In order to provide a thorough assessment of the state of research in social media, mental health, and youth, this paper presents a bibliometric analysis that methodically analyses an extensive collection of scholarly articles on the topic. This analysis employs rigorous methodologies to investigate publication trends, authorship patterns, citation networks, and theme clusters to identify the main focus areas and contributions from various disciplines. This analysis provides a basis for future research paths, intervention tactics, and policy formation by illuminating the multidisciplinary nature of research and the collaborative networks among researchers.

METHODS

Data Source

This bibliometric study utilized the scientific database Scopus to analyse publications containing the terms "Generation Z" OR "teenagers" OR "youth" AND "social media" AND "depression" in the title, abstract, or keywords. The study examined all types of papers published in the Scopus database between 2015 and 2022 to provide a comprehensive perspective on the world's research output. Scopus covers publications from diverse geographical locations, offering researchers a worldwide vantage point on advancements in research. This can prove especially advantageous in acquiring a deeper understanding of studies conducted across various regions and cultural contexts. Scopus indexes esteemed and peer-reviewed journals, guaranteeing that the sources researchers come across are of elevated quality and have undergone a specific level of meticulous assessment. The study employed bibliometric analysis, which according to Zupic and

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Cater (2015), involves a quantitative and statistical evaluation of published studies and is commonly used as a method of conducting a literature review.

The present study employed bibliometric analysis using Microsoft Excel 2013 to calculate the frequency and percentage of the published materials and produce the pertinent charts and graphs; VOSviewer (version 1.6.15), a software that enables the construction of a citation mapping from established databases, and Harzing's Publish and Perish software to calculate the citation metrics. According to van Eck and Waltman (2014), VOSviever software employs two standardized weights, namely the number and total strength of links, to visually represent the nodal network. Additionally, the study utilised Harzing's Publish or Perish as another tool in the analysis. Harzing's Publish or Perish is a software tool that provides a range of bibliometric indicators, including citation counts, h-indices, and publication metrics. The article used this tool to identify the most influential authors and publications in social media, mental health, and youth. Researchers used a WordArt tool to visualize the author's keywords, which generates a graphic representation of the most frequently occurring words in a text. The researchers input the author keywords from each publication into the WordArt tool and used the resulting visualisations to better understand the key themes and topics in the literature.

Defining keywords

This research was performed on June 26, 2023, using keywords in search strings relevant to social media, mental health, and youth, where keywords are searched based on the title, keywords, and abstract of the article as follows: TITLE-ABS-KEY ("Generation Z" OR "teenagers" OR "youth" AND "social media" AND "depression") AND PUBYEAR > 2010 AND PUBYEAR < 2023 AND (LIMIT-TO (SRCTYPE , "j") OR LIMIT-TO (SRCTYPE , "p")) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "cp")) AND (LIMIT-TO (LANGUAGE , "English"))

Search strategy

This study gathers materials published on social media, mental health, and youth interconnection using the online Scopus database. Due to its reputation as the largest citation and abstract database in technology, social science, business, and management, the Scopus online database was chosen for this study.

Refinement of Search Result

After obtaining the initial results, the researchers screened all articles based on the exclusion criteria determined in this research. There are two (2) exclusion criteria used to filter the search results: (i) sexual harassment (ii) artificial intelligence (iii) social anxiety (iv) transgender adolescents.

Table 1 summarises the total number of articles obtained after the refinement process.

Table 1. Refinement of search result

Search Keyword	Number of Scopus documents
TITLE-ABS-KEY ("generation z" OR "teenagers" OR "youth" AND "social media" AND "depression") AND PUBYEAR > 2010 AND PUBYEAR < 2023 AND (LIMIT-TO (SRCTYPE , "j") OR LIMIT-TO (SRCTYPE , "p")) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "cp")) AND (LIMIT-TO (LANGUAGE , "English"))	182

Source of Table 1: Scopus

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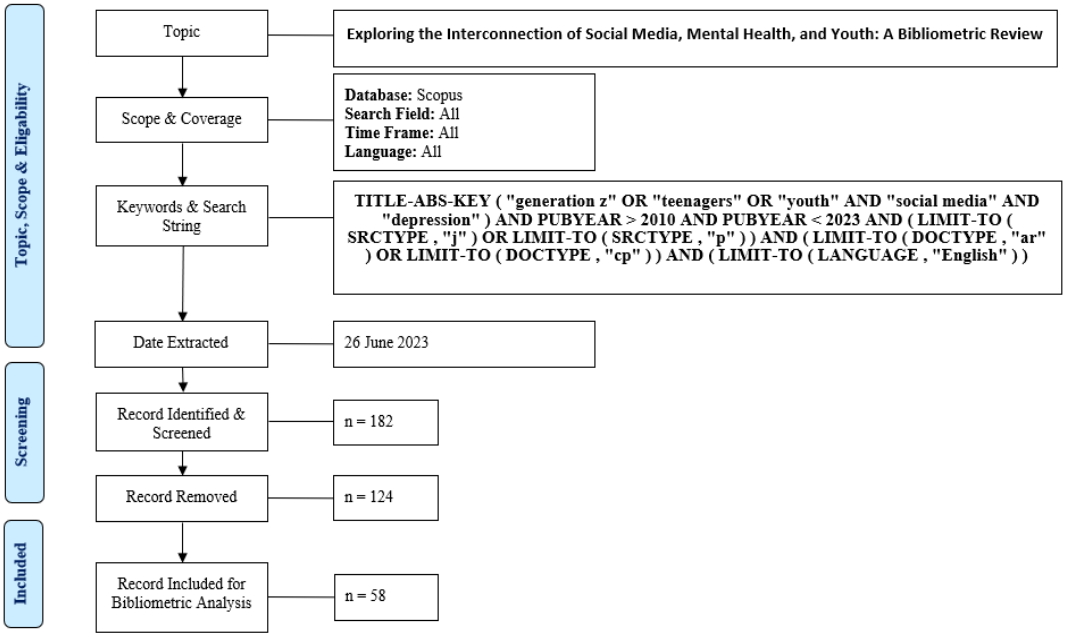

Fig. 1. PRISMA flow diagram

Source of Figure 1: Scopus

RESULTS

In analysing the academic works extracted during the search process, the following attributes were considered: document and source types, the language of documents, subject area, year of publication, the top 20 countries that contributed to the publication, the most active source titles, citation metrics, the top 20 highly cited articles, and keyword analysis. These attributes were utilised to understand the trends and patterns in the literature on the interconnection of social media, mental health, and youth.

Document and Source Types

Table 1 presents an overview of the distribution of publications according to their document types. The table provides information on the total number of publications, categorised as "Article" and "Conference Paper," along with their corresponding figures and percentages.

Out of the 58 publications analysed, the majority, accounting for 84.48% (49 publications), were classified as articles. On the other hand, conference papers constituted a smaller portion, representing 15.52% (9 publications) of the total.

These findings shed light on the relative prevalence of different document types within the analysed dataset, suggesting a higher frequency of articles than conference papers.

Table 2. Document type

Document Type	Total Publications (TP)	Percentage (%)
Article	49	84.48%
Conference Paper	9	15.52%
Total	58	**100.00**

Source of Table 2: Scopus

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Year of Publications/Evolution of Published Studies

Table 3 presents an in-depth analysis of the publication years within the dataset, providing valuable insights into the temporal distribution of the publications. The table includes information on the total number of publications for each year and their corresponding percentages and cumulative percentages.

The most recent year in the dataset is 2022, accounting for the highest number of publications at 39.66% (23 publications). This suggests a significant concentration of research activity in the most recent year, reflecting the timeliness and currency of the dataset.

The preceding years also demonstrate notable contributions, with 2019 comprising 8.62% (5 publications) and 2020 accounting for 24.14% (14 publications). These findings indicate consistent research output in the years immediately prior to the dataset's timeline, suggesting ongoing scholarly engagement and productivity.

Additional years, such as 2018, 2016, and 2015, represent a smaller fraction of the dataset. These years contributed 1.72% (1 publication) each, indicating a relatively limited presence within the dataset. However, their inclusion provides a historical perspective and highlights the incorporation of earlier research contributions.

The cumulative percentages help contextualize the distribution of publications over time. It can be observed that the cumulative percentage increases gradually, reflecting a cumulative accumulation of publications across the years analysed. By considering the cumulative percentage, it is evident that a significant proportion of the publications (82.77%) were published within the four most recent years (2019-2022).

Overall, this table provides a comprehensive overview of the publication years within the dataset, offering insights into the temporal trends and concentration of research output. The concentration of publications in recent years suggests an emphasis on contemporary research, while the inclusion of earlier years adds historical context to the dataset.

Table 3. Year of publications

Year	Total Publications	Percentage (%)	Cumulative Percent
2022	23	39.66%	39.66%
2021	11	18.97%	58.63%
2020	14	24.14%	82.77%
2019	5	8.62%	91.39%
2018	1	1.72%	93.11%
2016	3	5.17%	98.28%
2015	1	1.72%	100.00%
Total	**58**	**100.00**	

Source of Table 3: Scopus

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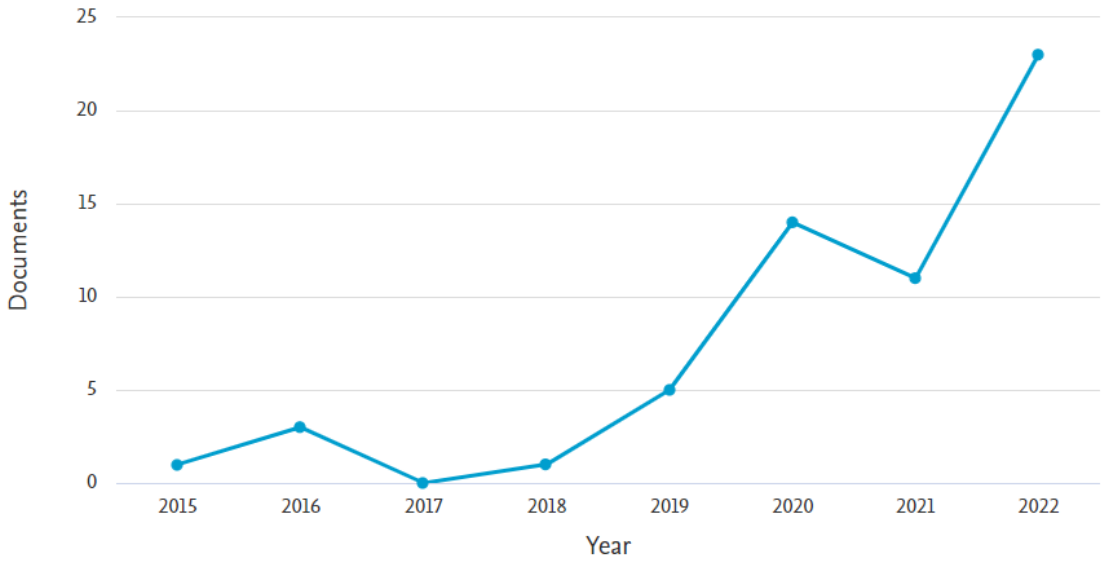

Fig. 2. Document by year

Source of Figure 2: Scopus

Languages of Documents

Table 4 presents a concise summary of the languages utilised for publications within the analysed dataset. The table provides information on the total number of publications and their respective percentages, focusing specifically on the language used.

The analysis of 58 publications reveals that English was the exclusive language employed in all publications, constituting 100.00% of the total. One document within the dataset was prepared in dual languages, implying that it contained content in both English and another language. However, most publications (99.99%) were conducted solely in English.

These findings underscore the dominant role of the English language as the primary medium for scholarly communication within the analysed dataset. English's global prevalence as the language of academia facilitates the dissemination and accessibility of research findings across international boundaries, promoting broader knowledge exchange and collaboration.

Table 4. Languages used for publications

Language	Total Publications*	Percentage (%)
English	58	100.00%
Total	**58**	**100.00**

*one document has been prepared in dual languages

Source of Table 4: Scopus

Subject Area

Table 5 presents a comprehensive breakdown of the subject areas covered by the analysed publications. The table provides information on the total number of publications and their percentages, categorising them into various subject areas. The findings reveal a diverse range of subject areas represented within the dataset. Medicine is the subject area with the highest number of publications, comprising 53.45% (31

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publications) of the total. This suggests a significant emphasis on medical research within the analysed publications.

Psychology is also a notable subject area, accounting for 24.14% (14 publications). This highlights the significance of psychological studies within the dataset. Other subject areas that contribute to the overall publication landscape include Computer Science (20.69% - 12 publications), Engineering (15.52% - 9 publications), Social Sciences (17.24% - 10 publications), Decision Sciences (10.34% - 6 publications), and Arts and Humanities (5.17% - 3 publications). Additional subject areas, such as Business, Management and Accounting, Environmental Science, Mathematics, Neuroscience, Pharmacology, Toxicology and Pharmaceutics, and Nursing, each account for a smaller proportion, with one or two publications in each respective area.

These findings provide valuable insights into the subject areas covered by the analysed publications, illustrating a diverse range of research domains. The predominance of Medicine and Psychology publications suggests the significance of these fields within the dataset. At the same time, other subject areas demonstrate a multidisciplinary approach and the inclusion of various academic perspectives.

Table 5. Subject area

Subject Area	Total Publications	Percentage (%)
Agricultural and Biological Sciences	1	1.72%
Arts and Humanities	3	5.17%
Business, Management and Accounting	3	5.17%
Computer Science	12	20.69%
Decision Sciences	6	10.34%
Energy	1	1.72%
Engineering	9	15.52%
Environmental Science	4	6.90%
Health Professions	1	1.72%
Mathematics	2	3.45%
Medicine	31	53.45%
Multidisciplinary	1	1.72%
Neuroscience	2	3.45%
Nursing	1	1.72%
Pharmacology, Toxicology and Pharmaceutics	1	1.72%
Psychology	14	24.14%
Social Sciences	10	17.24%

Source of Table 5: Scopus

Most Active Source Titles

Table 6 analyses the top 20 most active source titles regarding the number of publications they contributed to the dataset. The table provides information on the total number of publications associated with each source title and their respective percentages.

Among the top 20 most active source titles, the International Journal of Environmental Research and Public Health emerges as the leading source, with 6.90% (four publications) of the total. This suggests a significant focus on environmental research within the dataset, with this journal serving as a prominent outlet for related studies.

Several other source titles exhibit a notable presence, albeit with smaller contributions. These include the Journal of Adolescence and Adolescent Health, each accounting for 3.45% (2 publications) of the total. The Pediatric Annals, Acta Psychiatrica Scandinavica, Acta Psychologica, and Addictive Behaviors Reports are also represented, contributing 1.72% (1 publication) to the overall dataset.

The remaining source titles in the top 20 encompass diverse fields such as psychiatry, psychology, computational sciences, education, and youth services. While each source title contributes only one

publication, their inclusion in the list signifies their relevance within the scholarly discourse and their publication output within the dataset.

Overall, this table sheds light on the most active source titles, providing insights into the diverse range of journals, conferences, and publications contributing to the analysed dataset's research landscape. It underscores the prominence of particular sources in specific fields while reflecting the multidisciplinary nature of the scholarly community's output.

Table 6. Top 20 most active source title

Source Title	**Total Publications**	**Percentage (%)**
International Journal of Environmental Research and Public Health	4	6.90%
Journal Of Adolescence	2	3.45%
Journal Of Adolescent Health	2	3.45%
Pediatric Annals	2	3.45%
2021 4th International Conference on Electrical Computer and Communication Technologies Icecct 2021	1	1.72%
2022 17th International Workshop on Semantic and Social Media Adaptation and Personalization Smap 2022	1	1.72%
Acta Psychiatrica Scandinavica	1	1.72%
Acta Psychologica	1	1.72%
Addictive Behaviors Reports	1	1.72%
Annals Of General Psychiatry	1	1.72%
Archives Of Psychiatry and Psychotherapy	1	1.72%
Australasian Psychiatry	1	1.72%
Canadian Journal of School Psychology	1	1.72%
Ceur Workshop Proceedings	1	1.72%
Child And Adolescent Psychiatry and Mental Health	1	1.72%
Children And Youth Services Review	1	1.72%
Computational And Mathematical Organization Theory	1	1.72%
Computers In Human Behavior Reports	1	1.72%
Conference Proceedings of The IEEE International Performance Computing and Communications Conference	1	1.72%
Developmental Science	1	1.72%

Source of Table 6: Scopus

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Keywords Analysis

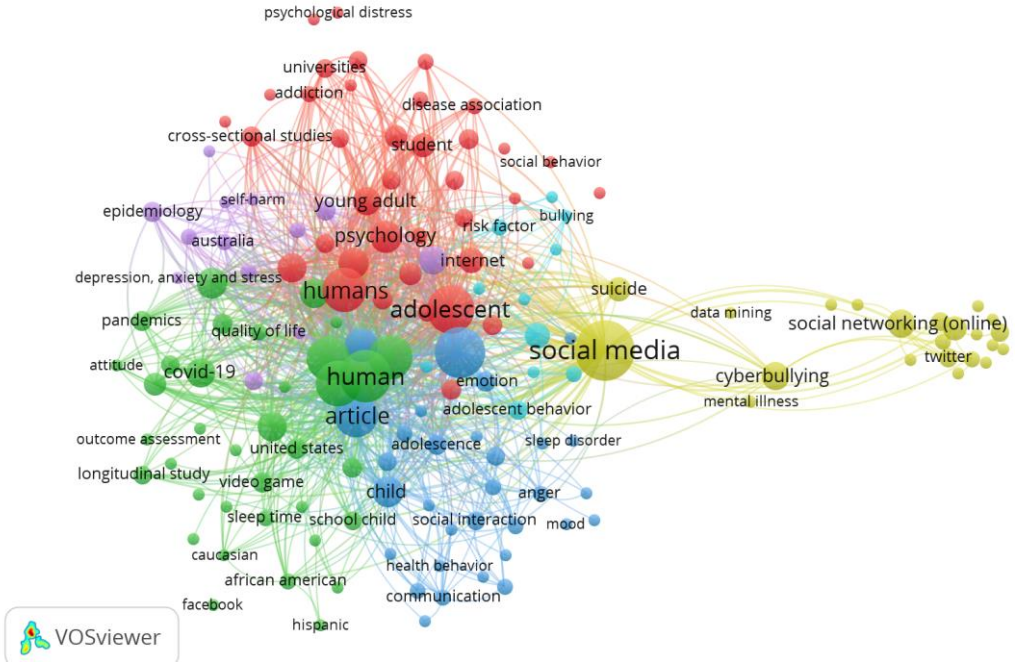

Fig. 3. Network visualization map of the author keywords

Source of Figure 3: Scopus

Fig. 4. Visualization of author keywords

Source of Figure 4: Scopus

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Table 7 presents a comprehensive analysis of the top 20 keywords found in the publications within the dataset. The table provides information on the total number of publications associated with each keyword and their respective percentages.

The most frequently occurring keyword is "Social Media," appearing in 72.41% (42 publications) of the total. This indicates a substantial focus on the influence of social media platforms within the dataset, underscoring their significance in contemporary research.

Other prominent keywords include "Human" (53.45% - 31 publications), "Depression" (51.72% - 30 publications), "Adolescent" (46.55% - 27 publications), and "Female" (41.38% - 24 publications). These keywords reflect the key themes and topics explored within the dataset, highlighting the attention given to mental health, specifically in relation to adolescent populations.

Additional keywords such as "Article," "Humans," and "Mental Health" appear frequently, each appearing in 39.66% (23 publications) of the dataset. These keywords denote general descriptors and areas of focus within the analysed publications. Furthermore, keywords such as "Male," "Anxiety," "Psychology," "Adult," and "Child" are also represented, demonstrating a diverse range of topics and populations examined within the dataset.

Several keywords relate to specific research methodologies or study designs, including "Cross-sectional Study," "Controlled Study," and "Major Clinical Study." These keywords indicate the prevalence of these research approaches within the analysed publications. The presence of keywords such as "COVID-19," "Cyberbullying," and "Social Networking (online)" suggests a focus on contemporary issues and their impact on mental health and social behaviour.

Overall, this table provides valuable insights into the prominent keywords within the dataset, shedding light on the central themes, populations of interest, and research methodologies employed. The identified keywords showcase the multidimensional nature of the research and highlight the key areas of focus within the analysed publications.

Table 7. Top 20 keywords

Author Keywords	**Total Publications**	**Percentage (%)**
Social Media	42	72.41%
Human	31	53.45%
Depression	30	51.72%
Adolescent	27	46.55%
Female	24	41.38%
Article	23	39.66%
Humans	23	39.66%
Mental Health	23	39.66%
Male	22	37.93%
Anxiety	13	22.41%
Psychology	12	20.69%
Adult	11	18.97%
Child	11	18.97%
Cross-sectional Study	11	18.97%
Anxiety Disorder	10	17.24%
Controlled Study	10	17.24%
Major Clinical Study	10	17.24%
COVID-19	9	15.52%
Cyberbullying	9	15.52%
Social Networking (online)	9	15.52%

Source of Table 7: Scopus

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Geographical Distribution of Publications - Most Influential Countries

Table 8 analyses the top 20 countries that have contributed significantly to the publications in the dataset. The table presents information on the total number of publications associated with each country and their respective percentages.

The United States emerges as the most prolific contributor, with 46.55% (27 publications) of the total. This indicates a substantial research output from the United States within the analysed dataset, highlighting its prominent role in the scholarly discourse.

India is the second most active country, accounting for 15.52% (nine publications). Australia and the United Kingdom share the third position, contributing 6.90% (four publications). These findings demonstrate a significant research presence in these countries, emphasizing their contributions to the dataset.

China, Canada, Hong Kong, Italy, Japan, South Africa, and South Korea are each represented by two publications, amounting to 3.45% each. These countries showcase their active engagement in the research domain and noteworthy contributions to the dataset.

Furthermore, several countries, including Bangladesh, Brazil, Kyrgyzstan, Malaysia, Mexico, Nepal, Nigeria, the Philippines, and Poland, are each associated with one publication, contributing 1.72% to the overall dataset.

Overall, this table provides insights into the geographic distribution of research contributions within the analysed dataset. The dominance of the United States in terms of the number of publications underscores its influential role in the scholarly landscape. Additionally, the inclusion of various other countries signifies a diverse range of global research perspectives and highlights their contributions to the dataset.

Table 8. Top 20 countries contributed to the publications

Country	Total Publications	Percentage (%)
United States	27	46.55%
India	9	15.52%
Australia	4	6.90%
United Kingdom	4	6.90%
China	3	5.17%
Canada	2	3.45%
Hong Kong	2	3.45%
Italy	2	3.45%
Japan	2	3.45%
South Africa	2	3.45%
South Korea	2	3.45%
Bangladesh	1	1.72%
Brazil	1	1.72%
Kyrgyzstan	1	1.72%
Malaysia	1	1.72%
Mexico	1	1.72%
Nepal	1	1.72%
Nigeria	1	1.72%
Philippines	1	1.72%
Poland	1	1.72%

Source of Table 8: Scopus

Authorship

Table 9 presents the 20 most productive authors in the field of study. These authors have contributed a significant number of documents related to the research topic. The table displays the author's name, the number of documents they have published, and the corresponding percentage of their contribution.

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Among the top productive authors are Moreno, M.A., Nicholas, J., Twenge, J.M., and Vishwakarma, D.K., each with two documents, accounting for 3.45% of the total publications individually. Other authors listed in the table have contributed one document each, representing a range of 1.72% of the total publications.

These authors have made noteworthy contributions to the research literature in the field, and their work has influenced the overall knowledge and understanding of the topic. Their diverse perspectives and expertise have enriched the body of knowledge in the area of study.

Table 9. 20 Most Productive Authors

Author's Name	No. of Documents	Percentage (%)
Moreno, M.A.	2	3.45%
Nicholas, J.	2	3.45%
Twenge, J.M.	2	3.45%
Vishwakarma, D.K.	2	3.45%
Adams, S.	1	1.72%
Akintimehin, T.	1	1.72%
Albert, U.	1	1.72%
Allison, S.	1	1.72%
Alvarez-Jimenez, M.	1	1.72%
Ameenuddin, N.	1	1.72%
Amster, R.	1	1.72%
Andrioni, F.	1	1.72%
Asibong, I.	1	1.72%
Asibong, U.	1	1.72%
Atif, A.	1	1.72%
Ayi, E.	1	1.72%
Bailey, E.	1	1.72%
Balouchzahi, F.	1	1.72%
Bao, S.	1	1.72%
Barrera, D.	1	1.72%

Source of Table 9: Scopus

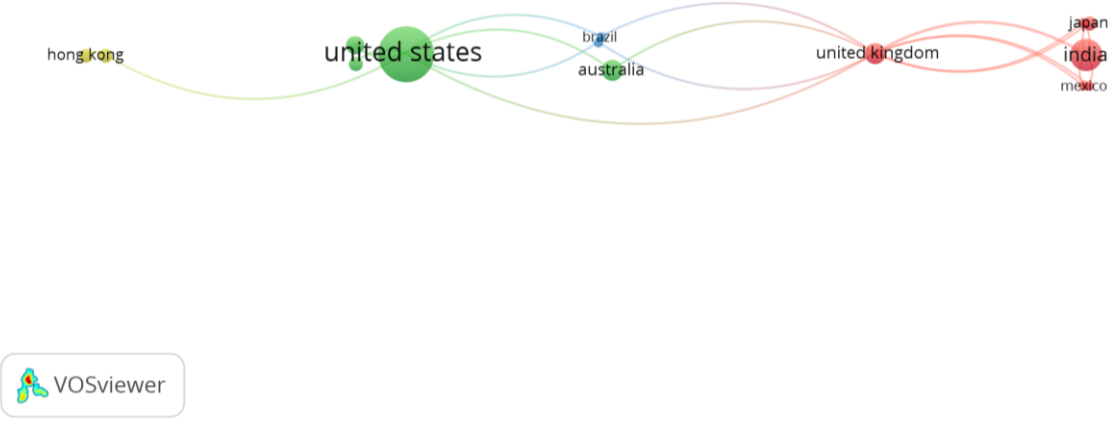

Fig. 5. Network visualization map of the co-authorship

Source of Figure 5: Scopus

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Unit of analysis = Countries

Counting method: Fractional counting

Minimum number of documents of a country = 1

Minimum number of citations of a country = 0

Text Analysis

Figure 5 presents a VOS viewer network visualization map of the author's keywords using binary counting. The map identifies two clusters based on the keywords and assigns them colours for clarity.

Cluster 1, depicted in red, consists of eight items: covid, depression, internet, life, pandemic, person, young person, and youth. These keywords likely represent a group of research themes or topics related to the interconnection between social media, mental health, and youth. The cluster suggests that there is a significant focus on understanding the impact of the COVID-19 pandemic, internet use, and depression on the mental well-being of young individuals.

Cluster 2, shown in green, comprises six items: association, data, depressive symptoms, relationship, suicide, and teenage. These keywords indicate another set of research themes or topics that likely explore associations between variables such as depressive symptoms, suicide, relationships, and data related to social media, mental health, and youth. The cluster may represent studies investigating the relationships and factors associated with mental health outcomes in relation to social media use among teenagers.

Overall, the visualization map of the author keywords in Figure 5 provides an overview of the main thematic clusters within the literature, highlighting key topics and associations in the research on the interconnection of social media, mental health, and youth.

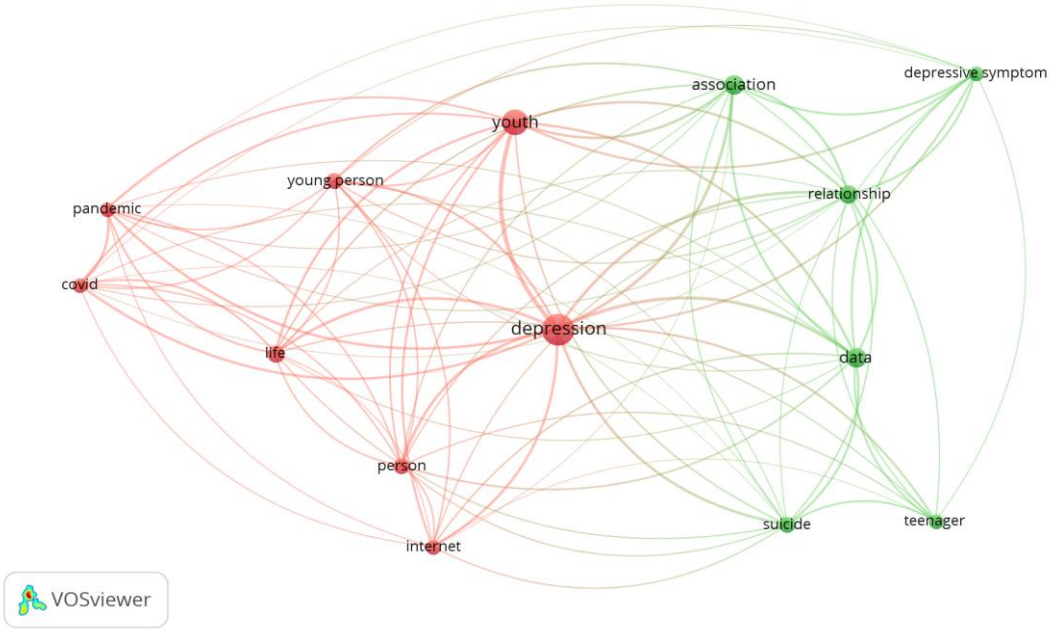

Figure 6. VOS viewer visualization of a term co-occurrence network based on title and abstract fields (Binary Counting)

Source of Figure 6: Scopus

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Most Influential Institutions

Table 10 lists the top 20 most influential institutions based on their contributions to the publications within the dataset. The table includes information on the total number of publications associated with each institution and their respective percentages.

Several institutions emerge as highly influential within the dataset, each contributing two publications, accounting for 3.45% of the total. These institutions include California State University, Fullerton; University of Pittsburgh School of Medicine; Florida State University; Harvard Medical School; Delhi Technological University; ORYGEN Youth Health; University of Pittsburgh; San Diego State University; Georgetown University; University of Melbourne; and Centre for Youth Mental Health. The inclusion of these institutions highlights their active involvement and notable contributions to the field of study.

Additionally, several institutions are represented by a single publication, each contributing 1.72% to the overall dataset. These institutions encompass a diverse range, such as Santa Barbara City College; Uttara Adhunik Medical College; University of Texas; Marquette High School; Public Health Informatics Foundation (PHIF); Quest Bangladesh Biomedical Research Center; United States Pharmacopeial Convention USP Herbal Medicines Compendium South Asia Expert Panel Member; Consortium of Australian-Academic Psychiatrists for Independent Policy and Research Analysis CAPIPRA; and Mars Laboratory. Although a smaller number of publications are represented, these institutions have made noteworthy contributions within the analysed field.

Table 10 provides insights into the influential institutions associated with the publications in the dataset. The presence of renowned institutions, such as Harvard Medical School and Georgetown University, underscores their significant contributions and expertise in the field. Moreover, the inclusion of diverse institutions from different regions and sectors demonstrates the global and interdisciplinary nature of the scholarly discourse within the analysed field.

Table 10. Top 20 most influential institutions

Institution	Total Publications	Percentage (%)
California State University, Fullerton	2	3.45%
University of Pittsburgh School of Medicine	2	3.45%
Florida State University	2	3.45%
Harvard Medical School	2	3.45%
Delhi Technological University	2	3.45%
ORYGEN Youth Health	2	3.45%
University of Pittsburgh	2	3.45%
San Diego State University	2	3.45%
Georgetown University	2	3.45%
University of Melbourne	2	3.45%
Centre for Youth Mental Health	2	3.45%
Santa Barbara City College	1	1.72%
Uttara Adhunik Medical College	1	1.72%
University of Texas	1	1.72%
Marquette High School	1	1.72%
Public Health Informatics Foundation PHIF	1	1.72%
Quest Bangladesh Biomedical Research Center	1	1.72%
United States Pharmacopeial Convention USP Herbal Medicines Compendium South Asia Expert Panel Member	1	1.72%
Consortium of Australian-Academic Psychiatrists for Independent Policy and Research Analysis CAPIPRA	1	1.72%
Mars Laboratory	1	1.72%

Source of Table 10: Scopus

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Citation Analysis

Table 11 provides an overview of the citation metrics for the publications within the dataset. The table includes information on publication years, citation years, the total number of papers, the total number of citations, and various derived metrics.

The publication years span from 2015 to 2022, indicating the temporal scope of the dataset. On the other hand, the citation years cover a period of eight years, from 2015 to 2023, highlighting the timeframe during which citations have been accumulated. A total of 58 papers are included in the dataset, which has collectively received 1331 citations. This suggests a significant level of scholarly engagement and recognition within the field.

The citations per year metric provides an average of 166.38 citations received per year across the eight-year citation period. This metric offers insights into the annual impact and visibility of the publications within the dataset. The citations per paper metric indicate an average of 22.95 citations received per paper, showcasing the level of scholarly attention and impact each paper has garnered.

The citations per author metric reveal that, on average, each author associated with the publications has received 304.2 citations. This metric reflects the individual research impact of the authors within the dataset. The papers per author metric indicate an average of 3.83 papers authored by each author, highlighting their level of research productivity and contribution to the dataset.

The h-index, a widely used metric in citation analysis, is 11 in this case, suggesting that 11 papers within the dataset have received at least 11 citations each. The g-index, another citation-based metric, is 36, indicating that the top 36 papers in terms of citation count cumulatively account for a substantial portion of the total citations received within the dataset.

Overall, Table 11 provides comprehensive citation metrics that offer insights into the impact, productivity, and visibility of the publications within the analysed dataset. These metrics serve as valuable indicators of scholarly influence and contribute to the assessment and evaluation of research contributions within the field.

Table 11. Citations metrics

Metrics	Data
Publication years	2015-2022
Citation years	8 (2015-2023)
Papers	58
Citations	1331
Citations/year	166.38
Citations/paper	22.95
Citations/author	304.2
Papers/author	3.83
h-index	11
g-index	36

Source of Table 11: Scopus

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Table 12. Highly cited articles

No.	Authors	Title	Year	Cites	Cites per Year
1	E. Bailey, A. Boland, I. Bell, J. Nicholas, L.L. Sala, J. Robinson	The Mental Health and Social Media Use of Young Australians during the COVID-19 Pandemic	2022	11	11
2	S. Bharti, A.K. Yadav, M. Kumar, D. Yadav	Cyberbullying detection from tweets using deep learning	2022	5	5
3	I.H. Bell, A. Thompson, L. Valentine, S. Adams, M. Alvarez-Jimenez, J. Nicholas	Ownership, Use of, and Interest in Digital Mental Health Technologies among Clinicians and Young People across a Spectrum of Clinical Care Needs: Cross-sectional Survey	2022	5	5
4	J.M. Twenge, J. Haidt, J. Lozano, K.M. Cummins	Specification curve analysis shows that social media use is linked to poor mental health, especially among girls	2022	5	5
5	T. Kidokoro, A. Shikano, R. Tanaka, K. Tanabe, N. Imai, S. Noi	Different Types of Screen Behavior and Depression in Children and Adolescents	2022	5	5
6	J.C. Durante, M. Lau	Adolescents, Suicide, and the COVID-19 Pandemic	2022	4	4
7	K. De Doncker, N. McLean	Social media, sleep difficulties and depressive symptoms: A case study of South African youth in Cape Town	2022	3	3
8	L. Orsolini, U. Volpe, U. Albert, C. Carmassi, G. CarrÃ , F. Cirulli, B. Dellâ ™Osso, V. Del Vecchio, M. Di Nicola, V. Giallonardo, M. Luciano, G. Menculini, M.G. Nanni, M. Pompili, G. Sani, G. Sampogna, A. Tortorella, A. Fiorillo	Use of social network as a coping strategy for depression among young people during the COVID-19 lockdown: findings from the COMET collaborative study	2022	2	2
9	S.S. Wahid, K. Ottman, J. Bohara, V. Neupane, H.L. Fisher, C. Kieling, V. Mondelli, K. Gautam, B.A. Kohrt	Adolescent perspectives on depression as a disease of loneliness: a qualitative study with youth and other stakeholders in urban Nepal	2022	1	1
10	S.M. Ho, W. Li	I know you are, but what am I? Profiling cyberbullying based on charged language	2022	1	1
11	L. Yu, M. Du	Social networking use, mental health, and quality of life of Hong Kong adolescents during the COVID-19 pandemic	2022	1	1
12	D.P. Cingel, A.R. Lauricella, L.B. Taylor, H.R. Stevens, S.M. Coyne, E. Wartella	U.S. adolescentsâ ™ attitudes toward school, social connection, media use, and mental health during the COVID-19 pandemic: Differences as a function of gender identity and school context	2022	1	1
13	L. Roberston, J.M. Twenge, T.E. Joiner, K. Cummins	Associations between screen time and internalizing disorder diagnoses among 9- to 10-year-olds	2022	1	1
14	J.L. Tay, Y.S.S. Goh, K. Sim, P. Klainin-Yobas	Impact of the HOPE Intervention on Mental Health Literacy, Psychological Well-Being and Stress Levels amongst University Undergraduates: A Randomised Controlled Trial	2022	1	1
15	C. Nereim, D. Bickham, M. Rich	Exploring Use Patterns and Racial and Ethnic Differences in Real-Time Affective States during Social Media Use among a Clinical Sample of Adolescents with Depression: Prospective Cohort Study	2022	1	1
16	B. Webb, J.C.L. Looi, S. Allison, N. Bidargaddi, T. Bastiampillai	Point of view: Could social media use be contributing to rising rates of deliberate self-harm and suicide in Australian youth populations?	2022	0	0

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17	W. Xiao, J. Peng, S. Liao	Exploring the Associations between Social Media Addiction and Depression: Attentional Bias as a Mediator and Socio-Emotional Competence as a Moderator	2022	0	0
18	A.N. Bazzano, Y. Sun, V. Chavez-Gray, T. Akintimehin, J. Gustat, D. Barrera, C. Roi	Effect of Yoga and Mindfulness Intervention on Symptoms of Anxiety and Depression in Young Adolescents Attending Middle School: A Pragmatic Community-Based Cluster Randomized Controlled Trial in a Racially Diverse Urban Setting	2022	0	0
19	M.M.D. Kane	Social Media, Adolescents, and the Role of the Pediatrician: Exploring Potential Benefits and Harms in Todayâ™s Digital Landscape	2022	0	0
20	F. Vahdati, A. Atif, M. Saberi	A machine learning-based depression detection on social media platforms for adolescents: A work in progress narrative review	2022	0	0

Source of Table 12: Scopus

DISCUSSION

The interconnection of social media, mental health, and youth is a complex and evolving topic that has gained significant attention in recent years. By examining an extensive collection of scholarly articles, we have identified key trends, influential authors and institutions, and thematic clusters within the literature on social media, mental health, and youth, identifying important publications, authors, institutions, and countries contributing to this field. The results indicate that the number of publications on this topic has been increasing, with the highest number recorded in 2022.

The United States was found to be the country with the highest number of publications, followed by India, Australia, and the United Kingdom. The geographic distribution of research contributions emphasizes the influence of the United States and the diverse global perspectives represented in the dataset. The study also identified Moreno, M.A., Nicholas, J., Twenge, J.M., and Vishwakarma, D.K. as the most productive authors. E. Bailey, A. Boland, I. Bell, J. Nicholas, L.L. Sala and J. Robinson's article is the most highly cited article in this field. These findings provide valuable insights for researchers and practitioners on this field's most influential authors and publications.

The study's findings also revealed the most influential institutions in this field, including California State University, Fullerton, the University of Pittsburgh School of Medicine, and Florida State University. These institutions' research outputs highlight their contribution to this field and can guide future research collaborations and partnerships.

One theoretical framework that can be applied to the findings is the Social Cognitive Theory (SCT) proposed by Bandura (1986). According to SCT, cognitive processes, observational learning, and self-efficacy beliefs influence individuals' behaviours. In the context of social media and mental health, SCT can help explain how exposure to certain content on social media platforms can shape young individuals' beliefs, attitudes, and behaviours related to mental health. Future research can explore the role of SCT in understanding the mechanisms through which social media use affects mental health outcomes among youth.

Another theoretical framework that can be relevant is the Transactional Model of Stress and Coping by Lazarus and Folkman (1984). This model emphasizes the dynamic interaction between individuals and their environment in stress appraisal and coping. In the context of social media and mental health, this framework

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can shed light on how social media use can serve as both a stressor and a coping mechanism for young individuals. Future research can investigate the specific stressors and coping strategies related to social media use and their impact on mental health outcomes.

From a practical standpoint, the findings of this analysis have important implications for various stakeholders, including parents, educators, mental health professionals, and policymakers. Identifying key themes, such as the impact of the COVID-19 pandemic, internet use, and depression on youth mental health, highlights the urgent need for targeted interventions and support systems. For example, educational programs can be developed to promote digital literacy and responsible social media use among young individuals. Mental health professionals can integrate social media platforms into their interventions and provide evidence-based guidance on navigating the online environment. Policymakers can use these findings to inform the development of regulations and guidelines to protect the mental well-being of youth in the digital age (World Health Organization, 2018).

In conclusion, this bibliometric analysis contributes to a more comprehensive understanding of the interconnection between social media, mental health, and youth by drawing connections to relevant theoretical frameworks and practical implications. The application of theoretical frameworks, such as Social Cognitive Theory and the Transactional Model of Stress and Coping, can provide insights into the underlying mechanisms.

It is important to note that research in this field is ongoing, and findings may vary across studies. While there is literature on this subject, the paper identifies the shortcomings of earlier research, including the absence of thorough bibliometric analysis and the exclusion of several pertinent themes and populations. The impact of social media on mental health is influenced by various factors, including individual characteristics, patterns of use, and the specific platforms involved. While social media platforms offer numerous benefits and opportunities for communication, information sharing, and community building, they can also impact young people's mental health and well-being in various ways.

CONCLUSION

The interconnection between social media, mental health, and youth is a topic that has garnered significant research interest. Numerous studies have explored social media's impact on young individuals' mental health. Findings suggest that excessive social media use can be associated with negative mental health outcomes such as depression, anxiety, loneliness, and decreased self-esteem. The significance of this study lies in its contribution to understanding the interconnection between social media, mental health, and youth. Through a bibliometric analysis of many academic articles, this study sheds light on the evolution of research trends and patterns related to social media, mental health, and youth. It identifies the countries of authors that contribute the most to the publication of social media, mental health, and youth research, as well as the most frequently cited studies and the most influential authors and research groups in the field.

A bibliometric analysis of this topic reveals an increasing number of publications, with the United States being the leading contributor, followed by India, Australia, and the United Kingdom. Prominent authors and institutions were identified, highlighting their contributions to the field. While social media platforms offer benefits for communication and information sharing, their impact on youth mental health is influenced by individual characteristics and platform usage. It is crucial to continue exploring this topic to better understand the interplay and promote the well-being of young people in the digital age.

Additionally, this study has theoretical implications for the academic community by giving a thorough summary of the most recent studies on the relationship between social media, mental health, and youth. This study recommends the use of theoretical frameworks since they can reveal the underlying mechanisms, including Social Cognitive Theory (SCT) and the Transactional Model of Stress and Coping. The academic community can concentrate on creating and assessing interventions that seek to lessen the adverse impacts of social media on juvenile mental health by building on study findings. This involves creating digital

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literacy initiatives, online mental health interventions, and tactics to encourage young people's resilience and positive online involvement.

Due to the study's bibliometric methodology's concentration on numerical data—such as publication numbers and citation counts—rather than qualitative insights that may have provided a more profound understanding, the study has limitations. There is a danger that publication bias will influence the findings because the study only considers papers from the Scopus database and overlooks potentially relevant research from other sources and databases. The scope of the study may have been constrained by the criteria used to omit significant studies during the refinement phase inadvertently. The study may have a linguistic bias and exclude important opinions published in other languages because it only looked at English-language articles. The study's results might also not accurately reflect the rapidly evolving digital landscape and fresh social media trends because they are based on previously published data.

The results of this study can be extended and improved by future research on the relationship between social media, youth, and mental health by pursuing different lines of investigation. Longitudinal studies are essential to understand the long-term effects of social media use on young people's mental health and to track causal relationships and underlying mechanisms across time. Additionally, research into the various functions of particular social media platforms and their characteristics in affecting young people's mental health outcomes is crucial because each platform's special characteristics may have a different effect, guiding the development of customised interventions and safe usage recommendations. Future research must focus on the potential positive effects of social media on youth mental health, uncovering how it can catalyse mental health awareness, support networks, and positive social ties, whereas existing literature frequently emphasises negative repercussions. In addition, it is crucial to recognise the complex interactions between social media, mental health, and young people within the context of intersectionality, which includes factors like gender, race, ethnicity, socioeconomic class, and sexual orientation. This investigation can shed light on disparities and inequities, guide intervention measures, and promote equitable health. Finally, there is a critical need for research assessing the effectiveness of interventions and strategies intended to support juvenile mental health while minimising the negative effects of social media use. In order to do this, it is necessary to evaluate the impact of programs that promote digital literacy, online resources for mental health, and laws limiting young people's access to social media.

In conclusion, this study contributes to the body of knowledge on the interconnection of social media, mental health, and youth that can grow and contribute to evidence-based practices, policies, and interventions that promote the well-being of young individuals in the digital era. As the digital age continues to shape the lives of youth, understanding the implications of their digital interactions on mental health remains pivotal. Social media, mental health, and youth interconnections bring together researchers from diverse disciplines, such as psychology, sociology, communication, and public health. This collaboration fosters the exchange of ideas, methodologies, and perspectives, leading to a more comprehensive and holistic understanding of the topic.

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CONFLICT OF INTEREST STATEMENT

The authors declare no competing interests.

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AUTHORS' CONTRIBUTIONS

All authors contributed to the conception and design of the study. Nurliyana Abas and Hanani Hussin conducted the bibliometric analysis, while Norafiza Mohd Hardi and Norhafiza Hashim analyzed the survey data. Nurliyana Abas and Hanani Hussin. drafted the manuscript, and all authors contributed to the critical revision of the manuscript. All authors approved the final version of the manuscript for submission. All authors agree to be accountable for all aspects of the work and ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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