Mapping Studies on Risk and Protective Factors for Mental Health in the Modern Era

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ABSTRACT

This bibliometric study delves into the extensive literature on risk and protective factors for mental health in the modern era, considering the complexities posed by technological advancements, socio-cultural shifts, and globalization. Utilizing bibliometric analysis, we identify clusters of literature, analyze trends over time, and explore potential research avenues. The network visualization reveals six distinct clusters, each representing thematic discussions related to mental health. Trend analysis highlights the evolution of research focus from early concerns to contemporary issues, with COVID-19 emerging as a prominent theme. Density analysis identifies research gaps and potential future topics. The collaboration network among authors suggests opportunities for interdisciplinary research. This analysis offers valuable insights for researchers, policymakers, and practitioners to inform evidence-based strategies for navigating the intricate landscape of mental health in the modern era.

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1. INTRODUCTION

In recent decades, the field of mental health research has witnessed an escalating significance driven by the recognition of the multifaceted nature of mental well-being in the modern era [1], [2]. The confluence of technological advancements, socio-cultural shifts, and globalization has presented individuals with both unprecedented opportunities and challenges. Against this backdrop, understanding the intricate interplay of risk and protective factors influencing mental health has become paramount [3], [4]. Mental health has emerged as a critical concern, influenced by various factors inherent to the modern era. As individuals navigate the complexities of the rapidly evolving world, understanding the intricate web of risk and protective factors affecting mental well-being becomes imperative [5].

The modern era is marked by the pervasive influence of digital technologies, transforming the way individuals connect, communicate, and perceive the world [6]. While these advancements have facilitated unprecedented access to information and resources, they have also introduced novel stressors and complexities, impacting mental health outcomes. Additionally, rapid urbanization, changes in work patterns, and evolving societal norms contribute to the dynamic landscape of mental health determinants [7], [8]. This research aims to systematically analyze the wealth of scholarly literature dedicated to identifying and comprehending the risk factors that contribute to mental health challenges, as well as the protective factors that promote resilience and well-being [9], [10].

Globalization has interconnected societies, exposing individuals to diverse cultural influences and perspectives. This interconnectedness brings both enriching experiences and potential stressors, necessitating a nuanced exploration of mental health factors that transcend geographical boundaries [11]–[13]. Furthermore, lifestyle changes, including shifts in dietary habits, sedentary behaviors, and altered sleep patterns, contribute to the intricate tapestry of elements influencing mental well-being [14], [15].

In light of these complexities, this bibliometric study aims to provide a comprehensive overview of the existing body of research dedicated to unraveling the risk and protective factors associated with mental health in the modern era. By examining the scholarly landscape, we seek to identify key themes, gaps in knowledge, and emerging patterns that can inform future research directions and evidence-based interventions. As we embark on this exploration, it is crucial to recognize the interdisciplinary nature of mental health research, encompassing fields such as psychology, psychiatry, public health, sociology, and more. By synthesizing insights from diverse disciplines, we aim to contribute to a holistic understanding of mental health dynamics and foster collaborative efforts towards promoting mental well-being in our rapidly evolving world.

2. LITERATURE REVIEW

2.1 Mental Health in Modern Era

In the modern era, mental health has gained significant recognition as a crucial component of overall well-being, leading to increased awareness, understanding, and destigmatization. The advent of technology and the proliferation of information have played a dual role in shaping the landscape of mental health. On one hand, the accessibility of online resources has empowered individuals to educate themselves about various mental health conditions, seek support, and connect with others facing similar challenges. On the other hand, the digital age has introduced new stressors such as social media pressures, constant connectivity, and information overload, contributing to the prevalence of conditions like anxiety and depression [16]–[20].

Moreover, the discourse surrounding mental health has evolved to encompass a broader

perspective that emphasizes holistic approaches to wellness [21]–[23]. There is a growing acknowledgment that mental health is interconnected with physical health, lifestyle factors, and societal influences. This shift has led to the integration of mental health initiatives into workplaces, schools, and communities, fostering an environment where open conversations about mental well-being are encouraged. Despite these positive developments, challenges persist, including disparities in access to mental health care, societal misconceptions, and the need for continued advocacy to ensure that mental health remains a prioritized aspect of public health in the modern era [22].

2.2 Risk and Protective Factor for Mental Health

Risk and protective factors play crucial roles in shaping an individual's mental health outcomes. Risk factors are conditions or experiences that increase the likelihood of developing mental health issues, while protective factors are aspects of one's life that enhance resilience and mitigate the impact of risk factors. Identifying and understanding these factors is essential for promoting mental well-being and preventing the onset of mental health disorders [1], [2], [24].

Risk factors for mental health can vary widely and may include genetic predispositions, adverse childhood experiences, trauma, chronic stress, substance abuse, and a lack of social support [25], [26]. Genetics can contribute to an individual's susceptibility to certain mental health conditions, while early life experiences, such as abuse or neglect, can have lasting effects on mental health. Chronic stressors, such as financial difficulties or work-related pressures, can also increase vulnerability to mental health

challenges. Substance abuse, including the misuse of drugs or alcohol, is another significant risk factor, as it can exacerbate existing mental health issues or contribute to their development [24], [27].

On the other hand, protective factors are crucial in promoting mental resilience and preventing the negative impact of risk factors. Strong social support, positive relationships, effective coping skills, and access to mental health care are key protective factors. A supportive and nurturing environment during childhood, positive role models, and a sense of belonging within a community can contribute to mental well-being. Additionally, the development of effective coping mechanisms, such as problem-solving skills and emotional regulation, can act as protective factors against stressors. Access to mental health care services and early intervention are also critical in preventing the escalation of mental health challenges.

3. METHODS

This bibliometric study aims to comprehensively map the existing literature on risk and protective factors for mental health in the modern era. By employing bibliometric analysis, we intend to uncover trends, identify influential contributors, and highlight gaps in research within this critical domain. We will conduct searches across multiple databases, including PubMed, Scopus, and Web of Science. These databases were selected for their comprehensive coverage of mental health research in the modern era. A combination of controlled vocabulary terms (MeSH terms) and free-text terms will be used. Key terms include "mental health," "risk factors," "protective factors," and "modern era.". Studies included in this analysis must be written in English, published in peer-reviewed journals, and focus on risk and protective factors for mental health in the modern era. Studies with insufficient

information, non-peer-reviewed sources, or those not directly relevant to the research question will be excluded.

Table 1. Data Citation Metrics

Publication years	: 1966-2023
Citation years	: 58 (1966-2023)
Paper	: 975
Citations	: 450741
Cites/year	: 7771.40
Cites/paper	: 462.30
Cites/author	: 203502.68
Papers/author	: 417.47
Author/paper	: 3.17
h-index	: 219
g-index	: 667
hI,norm	: 190
hI,annual	: 3.28
hA-index	: 97
Papers with ACC	: 1,2,5,10,20:889,827,610,393,251

Source: Publish or Perish, 2024

The table summarizes the academic output and impact of a researcher or a group of researchers over the period 1966-2023. The individual or group has published a total of 975 papers, receiving an impressive 450,741 citations, resulting in an average of 7771.40 citations per year and 462.30 citations per paper. The Cites/author ratio is exceptionally high at 203502.68, indicating substantial influence. On average, each author contributed to 417.47 papers, with an Author/paper ratio of 3.17. The h-index stands at 219, demonstrating a substantial level of productivity and impact, while the g-index is 667. The hI,norm is 190, suggesting a consistent level of high impact over the years. The hI,annual of 3.28 indicates a steady yearly increase in h-index. The hA-index is 97, emphasizing the author's significant contributions. Additionally, the table mentions specific papers with ACC (presumably referring to acceptance rates) and their corresponding citation counts, providing insights into the impact of individual papers. Overall, the table paints a picture of a highly productive and influential researcher or research group with a sustained and impactful scholarly output.

4. RESULTS AND DISCUSSION

This bibliometric analysis consists of four analyses, namely literature classification analysis, trend analysis, density analysis, and author network analysis. Before the analysis is carried out, the settings in the VOS Viewer application as a tool for conducting bibliometric analysis are to select the most relevant terms. From the 975 literatures collected, 4587 terms were found with a minimum occurrence of 10 times. These terms were then clustered into 137 terms. However, the application system will automatically select 60% of the most relevant terms from the total terms and produce 82 selected terms. After this identification is done, further analysis is carried out in the order previously mentioned.
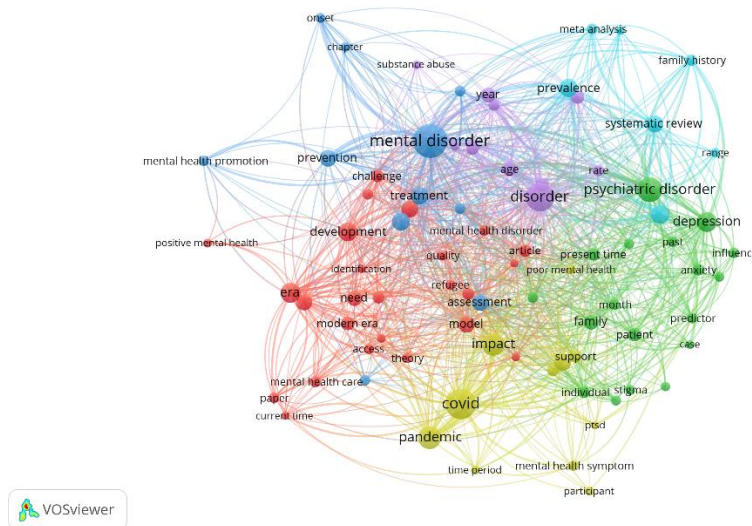
Figure 1. Network Visualization
Source: Data Analysis, 2024

The first analysis is a cluster analysis to determine the classification of literature related to "Risk and Protective Factors for Mental Health". This classification is based on similar themes and discussions of existing literature so that literature with the same themes and discussions will be incorporated into the same cluster. Through the Network Visualization feature, it was found that there are 6 clusters as illustrated in Figure 1. Each cluster is represented by one color. Cluster one with a total of 25 items is depicted in red. Cluster two is represented in green with 18 items. The third cluster is colored blue with 11 items. With the same number, the fourth cluster also has 11 items in yellow. The sixth cluster is purple with a total of 10 items. Finally, the sixth cluster is light blue with the least number of items at 7 items only. Table 2 below explains the composition of items in each cluster.

Table 2. Cluster Composition

Cluster	Item (Occurrence)
1	Access, challenge, current mental health , current time , development , era , identification , mental health care , mental health disorder , mental health service , modern era , positive mental health , quality , refugee , young person .
2	Anxiety , depression , family , individual , mental health risk , present time , psychiantric illness , serious mental illness , stigma , strength
3	Assessment , culture , epidemiology , mental disorder , mental health promotion , prevention , risk protective factor , suicide , treatment
4	Covid , mental health outcome , mental health symptom , pandemic , poor mental health , PTSD , social support
5	Adolescence , adolescent mental health , childhood , age , disorder , high risk , substance abuse
6	Family history , prevalence , woman

Source: Data Analysis, 20234

After the clusters were identified, the next analysis was related to research trends. This analysis was conducted using the Overlay Visualization feature, and the identification was successfully conducted over a period of 8 years, from 2010 to 2018, as shown in Figure 2 below.
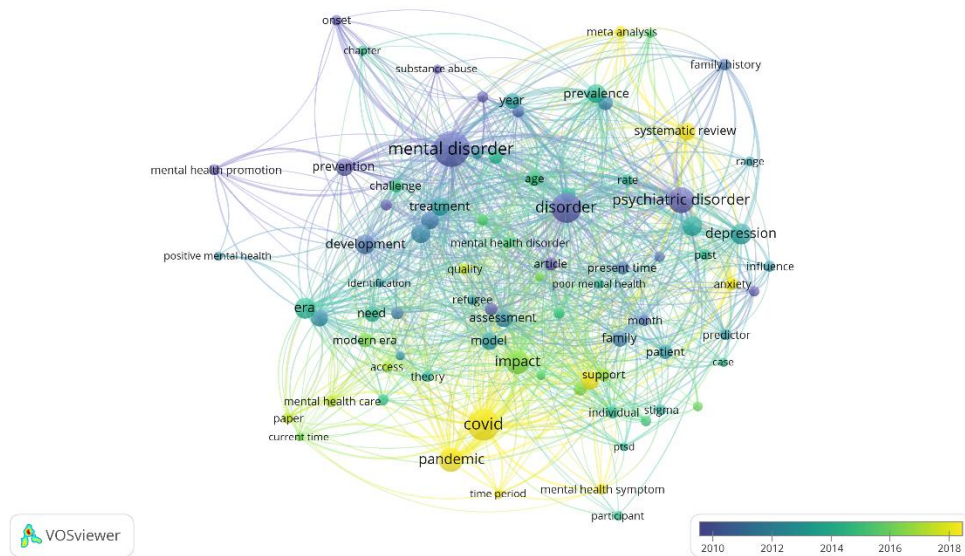
Figure 2. Overlay Visualization
Source: Data Analysis, 2024

Based on Figure 2 above, there is a classification of terms based on time order. Terms such as mental disorder, psychiatric disorder, mental health promotion, and substance abuse are terms that trended in 2010, marked with a dark color. Meanwhile, terms such as refugee, family, depression, mental health disorder, modern era, and access are themes or terms that trended among researchers from 2012 to 2016. While more recently, in 2018 to date, research trends have led to covid and pandemic, mental health symptom, and anxiety. This shows that these terms are currently the main focus of research from 2018 to 2023. Trend analysis can also be strengthened by identifying some key literature. These key literatures are characterized by a high number of citations, indicating their great impact on the development of research and scholarship in this field.

Table 3. Top Cited Research

Citations	Authors and year	Title
13499	EG Krug, JA Mercy, LL Dahlberg, AB Zwi (2002)	The world report on violence and health
9019	JD Hawkins, RF Catalano,	Risk and protective factors for alcohol and

Citations	Authors and year	Title
	JY Miller (1992)	other drug problems in adolescence and early adulthood: implications for substance abuse prevention
7792	MD Resnick, PS Bearman, RW Blum, KE Bauman (1997)	Protecting adolescents from harm: findings from the National Longitudinal Study on Adolescent Health
7554	JW Worden (2018)	Grief counseling and grief therapy: A handbook for the mental health practitioner
7507	KR Merikangas, J He, M Burstein, SA Swanson (2010)	Lifetime prevalence of mental disorders in US adolescents: results from the National Comobidity Survey Replication-Adolescent Supplement (NCS-A)

Citations	Authors and year	Title
7422	BG Link, J Phelan (1995)	Social condition as fundamental causes of desease
7231	M Rutter (1985)	Resilence in the face of adversity: Protective factors and resistance to psychiatric disorder
6628	EE Werner, RS Smith (2019)	Overcoming the odds: risk children from birth to adulthood
6590	World Health Organization (2001)	The World Health Report 2001: Mental health: new understanding, new hope

Citations	Authors and year	Title
6448	AS Masten, KM Best, N Garmezy (1990)	Resilence and development: Contributions from the study of children who overcome adversity

Source: Publish or Perish Output, 2024

Furthermore, the third analysis deals with discovering potential topics to analyze in the future. in the future. This analysis can be done with the Density Visualization feature feature, the results of which are illustrated in Figure 3 below.
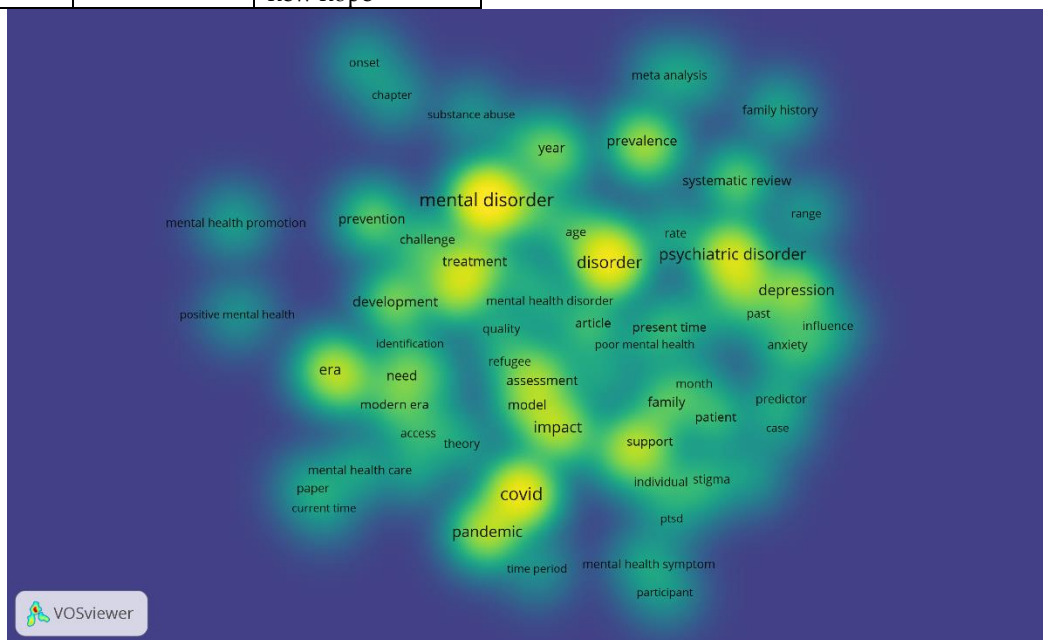

Figure 3. Density Visualization
Source: Data Analysis, 2024

Some terms with quite dominant color intensity indicate that the term is often used. Terms such as mental disorder, psychiatric disorder, covid, pandemic, and disorder are terms that have high color intensity. Thus, these terms are no longer potential to be used in future research. Future research can instead be directed to touch on topics such as mental health care, mental health symptom, positive mental health, and family history. These topics, in the visualization above, have a faint color intensity, characterizing that the terms rarely appear and still offer a high research gap. Table 3 below shows details on some of the most frequently occurring terms and some of the least frequently occurring terms.

Table 4. Most Occurrence and Fewest Occurrence

Most Occurrence	Fewest Occurrence

Item	Occurrence	Item	Occurrence
mental disorder	158	PTSD	10
covid	124	current mental health	10
disorder	109	positive mental health	11
psychiatric disorder	84	substance abuse	11
pandemic	73	high risk	12
depression	55	poor mental health	12
woman	48	serious mental illness	13
development	47	stigma	14
suicide	45	access	14
mental health outcome	43	refugee	14

Source: Data Analysis, 2024

Table 4 presents the most and fewest occurrences of specific items in a given dataset. The term "mental disorder" appears most frequently, occurring 158 times, followed by "covid" with 124 occurrences, and "disorder" with 109 occurrences. On the other hand, the items with the fewest occurrences include "PTSD" and "current mental health," each appearing 10 times, and "positive mental health" with 11 occurrences. Other infrequently mentioned items include "substance abuse" and "high risk," both occurring 11 times, as well as "poor mental health" and "serious mental illness," each appearing 12 and 13 times, respectively. The table provides insights into the distribution of specific terms in the dataset, highlighting the prominence of certain topics such as mental disorders and COVID, while also indicating less prevalent themes like positive mental health and substance abuse.

Furthermore, several authors with the largest amount of literature were also identified. However, the collaboration network between the authors is not yet complex and there is potential for future collaborative research between authors. This will lead to richer and more comprehensive research and ultimately expand the network mapping shown in Figure 1 above.

Table 5. High Number of Literature Authors

Author	Literature
Masten, AS	11
Organization, World health	8
Rutter, M	7
Luthar, SS	5
Werner, EE	5

Source: Data Analysis Result, 2024

The table displays the number of literature occurrences for specific authors. Masten, AS, has the highest number of literature occurrences with 11, followed by the World Health Organization with 8 occurrences. Rutter, M, has 7 literature occurrences, while Luthar, SS, and Werner, EE, each have 5 occurrences. The table likely reflects the frequency of citations or references to works by these authors in a given dataset or field, indicating their notable contributions to the literature in the respective domain.

Comparison with Previous Studies

Bibliometric analysis of mental health research has been conducted in various studies. These analyses use methods to map the evolution, hotspots, and trends of research in the field of mental health. The studies utilize data from sources such as the Web of Science Core Collection and employ bibliometric methods and visualization analysis to identify influential journals, disciplines, countries, institutions, and authors in the field [28]–[30]. The analyses also aim to shed light on current research progress and future trends, providing valuable insights for researchers and policymakers. The studies highlight the growing volume of mental health research publications, the increasing trend towards international collaboration, and the identification of research hotspots and trends in specific areas such as the mental health of children and adolescents, older people, and during the COVID-19 pandemic [31], [32].

Implication

The findings of this comprehensive bibliometric study on risk and protective factors for mental health in the modern era hold significant implications for both research and practice. The identification of distinct clusters within the literature, each representing specific themes and discussions, provides a structured understanding of the multifaceted nature of mental health research. The trend analysis underscores the dynamic evolution of research focus over the years, highlighting shifts from early concerns like mental disorders to contemporary issues such as the impact of COVID-19 on mental health. Furthermore, the density analysis reveals potential avenues for future research by identifying topics with lower occurrence, indicating research gaps that warrant exploration. Notably, the collaboration network among authors suggests opportunities for enhanced interdisciplinary research to foster a more holistic understanding of mental health dynamics. Policymakers, researchers, and mental health practitioners can use these insights to prioritize areas of intervention, allocate resources effectively, and inform evidence-based strategies for promoting mental well-being in our rapidly evolving world.

5. CONCLUSION

In conclusion, this bibliometric analysis provides a comprehensive overview of the extensive body of research dedicated to unraveling the risk and protective factors associated with mental health in the modern era. The clusters identified through network visualization, trends highlighted in overlay visualization, and potential research topics revealed in density visualization collectively contribute to a nuanced understanding of the evolving landscape of mental health research. The high citation counts of influential literature underscore the impact of key works in shaping the discourse around risk and protective factors. The collaboration network among authors hints at opportunities for interdisciplinary collaboration, fostering a more holistic approach to mental health research. As mental health continues to gain recognition as a critical facet of overall well-being, the implications drawn from this analysis can guide future research endeavors, policy formulation, and intervention strategies to address the dynamic challenges and opportunities in promoting mental well-being in the modern era.

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