
Bibliometric Analysis on Stress Management and Coping Strategies

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Abstract:

This study offers a thorough bibliometric examination of worldwide trends in coping mechanisms and stress management research. A comprehensive set of bibliometric techniques, such as performance analysis, scientific mapping, and citation analysis, were employed to examine 407 relevant records obtained from the Web of scientific. The data shows a consistent increase in research production, peaking in 2021, and charts the history and trends in publications from 1991 to 2024. The report also looks at the most significant writers, journals, nations, and keywords in the industry. Interestingly, the UK and the US appear as leaders in international collaborations and research contributions. Co-authorship analysis, co-occurrence analysis, and bibliographic coupling are examples of science mapping approaches that were used to identify the conceptual framework of stress management research as well as the structure of nation cooperation. The findings have implications for future study paths in stress management and coping strategies and offer insightful information about the worldwide research field.

Keywords: Stress Management, Coping Strategies, Bibliometric Analysis.

1. INTRODUCTION

In many fields, including psychology, medicine, education, and organizational behavior, stress management and coping strategies have attracted a lot of interest. If stress is not controlled, it can have serious negative impacts on one's physical, psychological, and emotional health. Stress is the body's response to perceived threats or obstacles (Yanina et.al.,2004)¹. Long-term exposure to stress has been linked to a variety of health issues, including weakened immune systems, mental health conditions, and cardiovascular diseases (Yongrong et al., 2023)². The implementation of good stress management strategies is not only important for effective personal and professional outcomes but also for physical well-being.

Coping strategies are specific ways people deal with stress; these can be either maladaptive or adaptive (Viktoriya et al., 2024)³. Adaptive techniques have been shown to enhance resilience and overall well-being. Specific techniques include problem-solving, mindfulness, and seeking social support (Ana et al., 2024)⁴. Maladaptive strategies include substance abuse, denial, and avoidance, which enhance stress and negatively impact long-term health outcomes.

An increasing number of studies in the last decades have identified the advantages of stress management programs in corporate and healthcare settings among others (Bala et al., 2024)⁵. Symptoms of stress are reduced, and mental health outcomes improved as a result of the stress management strategies likened to cognitive-behavioral therapies and mindfulness-based stress reduction programs

(Tammy, Sos et al.,2024)⁶. Stress management programs have also been shown to raise the bar on quality of life and productivity in work environments (Ming, Chen et al., 2021)⁷.

This bibliometric review is conducted to present an in-depth analysis of the trends in stress management and coping techniques research over the last decades. It intends to map the intellectual structure of stress research and identifies the key trends in publication output, important authors, major countries, and prestigious journals. Furthermore, this study will attempt to apply the methodologies of scientific mapping on bibliographic coupling, co-authorship analysis, and keyword co-occurrence in order to crystallize the conceptual and collaborative framework in this area. The results will provide a platform for further scholarly research and insightful information about the development of stress management research.

1.1 Conceptual Background:

Stress is a normal response to demanding or threatening situations and significantly and negatively affects the individual's physical and emotional well-being. stress can be defined as how people think about and react to events they appraise as overpowering or beyond their ability to cope. It has been associated with a variety of adverse health effects, including heart disease, weakened immune responses, and mental health disorders such as anxiety and depression (Justin et al., 2021)⁸. In the modern world, effective managing of stress is important if rapid progress and success in personal and official life are to be witnessed. An improvement in the quality of life and health calls for an examination into how individuals cope or manage stress.

1.1.1 Coping Strategies and Stress Management:

Coping mechanisms are behavioral and physical actions taken by an individual to keep their level of stress in check. These can typically be grouped into two broad categories, the most common being maladaptive and adaptive. Maladaptive methods, such as avoidance or denial, tend to increase stress levels and contribute to ill health; conversely, adaptive strategies, including problem-solving, mindfulness, and social support, tend to decrease

stress and enhance one's resilience to it (Yoneta, Wamea. & Rifki, Sakinah, Nompo. 2024)⁹. Studies have indicated that those who use adaptive coping techniques typically have improved mental health, more resilience, and a higher standard of living. There are studies that prove a person's good mental health, resilience, and quality of life when using adaptive coping strategies. Minimizing stress, in particular, was noted in interventions based on mindfulness and has been associated with benefits in physical and mental health results (Yukui,& Zhang. (2024)¹⁰.

1.1.2 The Growth of Research in Stress Management:

From fields as varied as organizational behavior, psychology, and medicine, there has been tremendous growth of research on the field of stress management and the various coping methods. In fact, in recent decades, a number of studies have been conducted on how various populations, such as students, medical professionals, and business owners, manage to cope with stress in daily life (Ivana, Mašková. 2023)¹¹. The interest in studies regarding stress management has increased due to people worldwide facing high levels of stress and anxiety brought about by the COVID-19 pandemic (Rogowska, A. M., Kuśnierz, C., & Bokszczanin, A. 2020)¹². It seeks to analyze the trends of research in this field on coping mechanisms and the management of stress by identifying key writers, key journals, and patterns of collaboration. The report is of value in bringing useful insight from the global research scene and suggesting prospective routes for future research through an in-depth review of the growth and development of the field.

2. DATA AND METHODOLOGY

The present study has adopted a bibliometric approach to review global trends in research about the field of stress management and coping mechanisms. The data for this analysis were retrieved from the large, highly accessed research database Web of Science. Following are the stages of collecting, screening, and reviewing the relevant literature:

2.1 Data Collection

The search phrase that yielded articles discussing both stress management and coping strategies was TS= ("Stress Management") AND TS= ("Coping Strategies"). The preliminary number of documents retrieved from the Web of Science database for the period spanning 1991 to 2024 was 502. After removing superfluous and duplicate entries, 407 records remained for further screening.

2.2 Data Filtering

All irrelevant data to the study focus were filtered out, including records that did not discuss the management of stress or coping techniques. Bibliometrically deficient records were also excluded from analysis. The final dataset was 407 records after filtering.

2.3 Resources for Data Analysis

The bibliometric software used to map and visualize the results of this investigation includes VOSviewer and Biblioshiny, an R-based package. VOSviewer was used to create particularly co-authorship, co-occurrence of keywords, and citation analysis maps. By applying these techniques, areas of interest for research were plotted and major actors in the field of stress management pinpointed.

Assessment of journals, authors, and nations was done using several bibliometric markers, including:

The total number of papers published by a journal, author, or nation is referred to as total

publications(TP).

2.4 Total Citations (TC): This represents the total number of citations that the papers receive.

2.5 Citation per Publication (C/P): It is the ratio that calculates the average influence of a publication.

2.6 H-index: This is the factor to measure the productivity of the publications with the effect of citation.

We estimated the influence of the journals publishing the research, applying measures at a journal level, namely SNIP, SJR, and Cite Score.

Performance Analysis is done to understand the evolution and trend in the publications of Stress Management and Coping strategies. Science Mapping – citation analysis is used to figure out the top countries, leading journals, and influential authors and titles with respect to Stress Management and Coping Strategies. Science Mapping – Co-authorship analysis of countries has been done to assess the structure and pattern of country collaboration in Stress Management and Coping Strategies. Science Mapping – Co-occurrence analysis is used to figure out the conceptual structure of keywords in Stress Management and Coping Strategies. Science Mapping – Bibliographic coupling of countries is used to understand countries' coupling structures and how often countries share similar literature in this field of Stress Management and Coping Strategies.

3. BIBLIOMETRIC ANALYSIS:

3.1. Trends in Yearly Publications

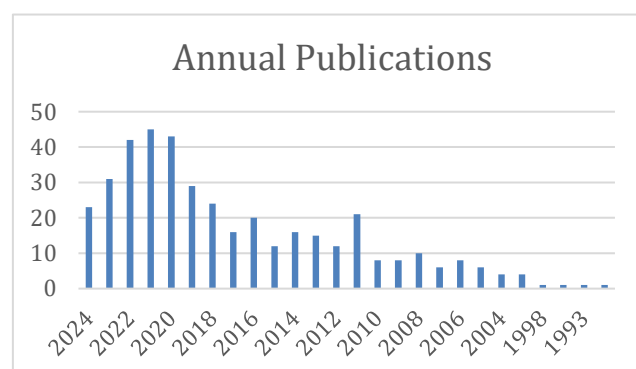


Figure 1 (Source: Web of Science)

A long-term rise in research production is highlighted by the bar chart, which shows the trend in annual publications from 1991 to 2024. The graph displays a consistent increase in publications after low publication counts in the early 1990s, with a recognizable acceleration in publications about 2008. The number of publications achieved its peak in price in 2021 and 2022, after which it fell down at the close of 2023 and opening of 2024, showing

indeed that productivity has gone down in recent times. This could be due to several factors that might have caused shifts either in the focus of the research, in the availability of financing, or in other external factors affecting the rate of publication. Overall, the graph shows a significant increase in scholarly production throughout the years, however several publications appear to have peaked or decreased recently.

3.2. Leading Countries:

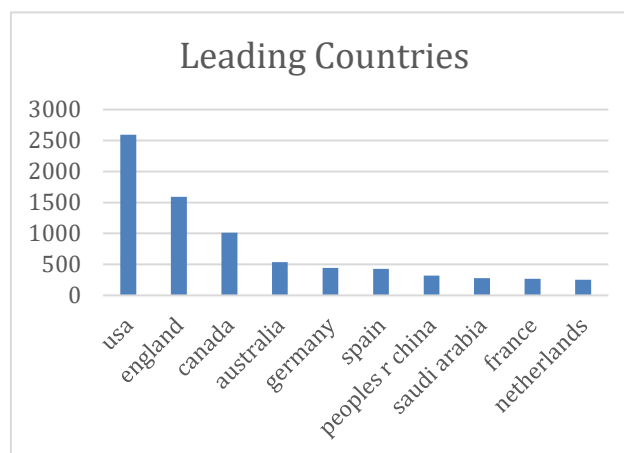


Figure 2 (SOURCE: VOSVIEWER)

The quantity of publications linked to different nations is shown in the "Leading Countries" bar chart. With almost 2,500 publications, the United States leads by a wide margin, followed by England with about 1,500 publications. Australia and Canada have also made significant contributions; they have each published more than 500 times. China, Germany, and Spain produce a modest amount of publications, while Saudi Arabia, France, and the

Netherlands produce comparatively fewer publications—all of them have fewer than 500. This graph shows how the United States and England lead the world in research production, with other nations making significant but smaller contributions. The distribution points to a significant concentration of research activity in a small number of highly developed countries, mainly in North America, Europe, and Australia.

3.3. Influential Authors:

Table 1: Influential Authors

Rank	Authors	Total Citations	Total Publications
1	Baruffi, Margherita	113	2
2	Sipresso, Pietro	113	2
3	Gaggioli, Andrea	113	2
4	Grassi, Alessandra	113	2
5	Morganti, Luca	113	2
6	Pallavicini, Federica	113	2
7	RasPELLI, Simona	113	2
8	Riva, Giuseppe	113	2
9	Serino, Silvia	113	2
10	Vigna, Cinzia	113	2

With 113 total citations and two publications each, the top 10 authors are listed in the table according to their total citation counts. In terms of citation effect and publication count, all of the authors—Margherita Baruffi, Pietro Cipresso, Andrea Gaggioli, and others—contribute equally. This consistency raises the possibility that these writers

worked together on related or identical projects, producing citation metrics that are exactly the same. Because all of the authors in the table have the same number of citations, which suggests that their combined work may be of some importance, it is easy to see how influential these writers are collectively in their field.

3.4. Impactful Journals:

Table 3. Analysis of Ranking on top 12 leading Journals

Sl .No.	Source	TCN	TPN	C/P	Cite score	SNIP	SJR	H	Q
1	Journal of Advanced Nursing	622	2	311	6.4	1.529	1.218	178	Q1
2	Journal of American College Health	519	3	173	5.4	0.973	0.726	111	Q2
3	Frontiers in Psychology	275	14	19.64	5.3	1.071	0.8	184	Q2
4	Stress and Health	200	8	25	6.4	1.255	1.303	82	Q1
5	Plos one	181	3	60.33	6.2	1.084	0.839		
6	Work and Stress	128	2	64	11.7	2.479	2.773	115	Q1
7	Journal of Personality	94	1	94	9.6	2.27	2.223	435	Q1
8	Saudi Dental Journal	92	1	92	3.6	1.015	0.52	37	Q2
9	BMC Psychology	70	6	11.67	3.9	1.182	0.954	40	Q1
10	British Dental Journal	68	3	22.67	3.1	1.0	0.602	95	Q2
11	Occupational Medicine-Oxford	66	1	66	5.8	0.776	0.726	103	Q2
12	Journal of Clinical Nursing	65	3	21.67	6.4	1.582	1.235	124	Q1

Academic journals are ranked in the table according to different impact criteria. With 622 total citations and a remarkable citations-per-publication (C/P) ratio of 311, the "Journal of Advanced Nursing" is in first place and has a considerable impact with just 2 publications. The high C/P ratios of 173 and 64, respectively, in the "Journal of American College Health" and "Work and Stress" further demonstrate their significant impact. With 14 articles, "Frontiers in Psychology" has the highest C/P ratio (19.64), suggesting a less focused but wider influence. Despite having fewer publications, journals with high C/P ratios—94 and 92, respectively—such as the Saudi Dental Journal and the Journal of Personality, have significant influence. The majority of Q1 journals exhibit elevated impact metrics, underscoring their scholarly importance.

3.5 Country Collaborations

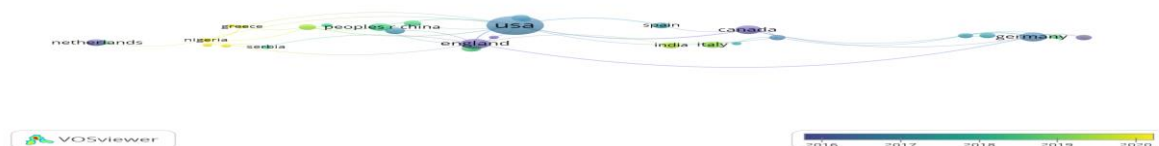


Figure 3 (Source : Vos viewer)

The USA and England are prominently displayed on the network map as major centres for international research collaborations, with strong links to other nations. While China and India have only minor ties, Germany and Canada are also important

participants. The color variation shows that the majority of cooperation took place between 2016 and 2020, with the lighter shades denoting more recent actions. The graphic emphasizes how important the United States and Great Britain are to global research networks.

Table 4: Country Collaboration

Country	Total Link Strength	TC	TP
USA	18	2595	108
Germany	14	442	26
England	12	1591	30
China	8	320	18
Switzerland	8	90	8
Canada	7	1011	23
Nigeria	7	85	5
Austria	6	76	6
Saudi Arabia	6	281	11
France	4	268	9

The significance of research and the strength of international collaboration are shown in the table. With the most publications (108), total citations (2595), and link strength (18), the USA dominates the world's research and collaboration networks, demonstrating its dominance. Both Germany and England produce a great deal of research, with Germany exhibiting strong collaborative ties and

England having a greater overall number of citations (1591). Even though they produce less papers and citations, nations like Saudi Arabia, China, and Canada make a moderate contribution to global research. In terms of overall influence, the United States leads the world in research, although other major players include England, Germany, and other nations.

3.6. Bibliographic Coupling of Countries and documents:

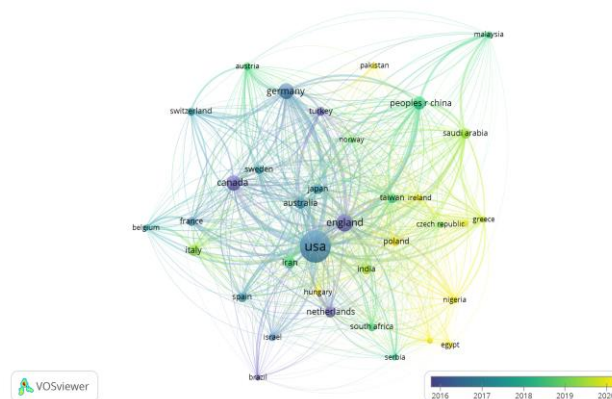


Figure 4 (Source: Vos-viewer)

With the use of VOSviewer, an illustration was produced that displays the bibliographic coupling of nations conducting research on coping mechanisms

and stress management. Greater nodes, such as those in the USA and England, indicate stronger research output. The size of each node reflects the number of

129

Table 5: Co-occurrence analysis keeping 10 keywords as the minimum occurrence

Cluster	Label	Occurrences	Avg. Citations
1	Academic Stress	5	14.6
1	Emotions	5	41.8
1	Health	5	24.2
1	Health Promotion	7	29.1429
1	Mindfulness	8	8
1	Performance	6	46
1	Stress Management	67	26.2239
1	University students	8	36.875
1	Wellbeing	7	12.8571
2	Breast Cancer	6	22.6667

3.8 Top 15 highly cited documents

Here is the result of 15 studies that examined coping mechanisms and stress management. The impact of stress management training on self-efficacy in hemodialysis patients is examined in a study by Wong PTP that was published in BMC Psychology and has 42 total citations. With 6 citations in Stress and Health, Wang Fong-Gang et al. conducted study on web-based health coaching for women's stress management. A randomized experiment involving public health nurses' stress management training was published by Shavaki Mounes Asadi and colleagues in the Journal of Advanced Nursing, with 2 citations. Roohafza Hamidreza's research, which has received 3 citations, examines coping mechanisms used by farmers in the Journal of Agromedicine. In the Work-A Journal of Prevention Assessment & Rehabilitation, Holton M. Kim et al. gathered 61 citations for their study on employees' adaptive and maladaptive coping strategies. Holmstrom Amanda J.'s work on life stress management in Stress Medicine gathered 1 citation. Giuseffi Danielle L. et al.'s study, which was published in Sprache-Stimme-Gehoer with 3 citations, examined coping mechanisms and vocal pain in dysphonia patients. In the Australian Journal of Guidance and Counselling, Estores Irene M. and colleagues compared stress management techniques for school counselors and received no citations. Without providing any citations, Collasius Valerie looked at cardiovascular events associated with coping techniques in the European Journal of Cardiovascular N. The American Journal of Surgery

published a study by Coban Aysel Esen and Hamamci Zeynep on surgeons' coping mechanisms during surgery, with 1 citation. Bahraseman Zohreh Ghasemi received 2 citations in Perspectives in Psychiatric Care for her research on stress management in undergraduate healthcare students. In a study on stress and coping among Saudi medical professionals, Anton Nicholas E. et al. were published in the Annals of Saudi Medicine and received 58 citations. With 28 citations, Alosaimi Fahad Dakheel's article in Contemporary Challenges in Medical Education addressed coping mechanisms and well-being in medical education. With 17 citations, Alkhawaldeh Ja'far M.'s study from the Journal of Diabetes and Metabolic Disorders examined coping mechanisms used by Iranian mothers of children with type 1 diabetes. Finally, without any citations, Abu Zead Mervat Mamdouh's phenomenological study on coping mechanisms in first-year nursing students was published in Bioscience Research.

4. DISCUSSION AND CONCLUSIONS:

4.1 Discussion:

This bibliometric analysis offers a thorough summary of the literature on coping mechanisms and stress management from around the world, highlighting important patterns and trends over the previous several decades. The results show that the number of publications has been rising gradually and peaked in 2021. This increase implies that stress management is receiving more scholarly attention, which is probably due to the global pandemic and

rising mental health awareness. Similar patterns have been observed in nations like the United States and England, which have emerged as the top researchers in this field. The strength of these nations' health systems, their cutting-edge research facilities, and their leadership in the world in tackling stress-related problems are all reasons for their dominance in the subject (Sutton, Richard 2022)¹³.

The analysis also identifies the leading publications and writers in the sector. Some of the most cited studies on stress management have been published in prestigious journals including *Frontiers in Psychology* and the *Journal of Advanced Nursing*, highlighting these journals' significance as important venues for research dissemination. Among the well-known writers mentioned are Margherita Baruffi and Pietro Cipresso, who have regularly produced works for the literature and frequently worked together on projects that have received a lot of attention. This illustrates the collaborative character of stress management research, where co-authorship is essential to producing high-impact articles.

Important study themes including "stress management," "mindfulness," "mental health," and "resilience" are revealed by keyword co-occurrence analysis. The increasing acceptance of mindfulness-based stress reduction (MBSR) practices and the increased emphasis on mental health, especially in the wake of the COVID-19 pandemic, are both supported by these findings (Antonova, Elena, et al. 2021)¹⁴. Furthermore, the bibliographic coupling study also provides a collaborative aspect of the research area in stress management by showing that there is a significant relationship between countries like the United States, England, and Germany. The binding factor is the shared references among them, hence connecting them through a network of knowledge sharing.

4.2 Conclusion:

To sum up, our bibliometric analysis provides insightful information about the worldwide research environment surrounding coping mechanisms and stress management. The importance of international cooperation on the issues of stress-related health concerns is represented by a steady growth in the

number of publications and also by the leading positions of the United States and England in both productivity and collaborative work. With growing personal and professional involvement in questions of stress, the role of mindfulness techniques and adaptive coping mechanisms will be even more important. Results also call for a renewed emphasis on the importance of the MBSR programs themselves, which stand out as far better than every other in effectively promoting less stress and reducing symptoms of deteriorated mental health. The study in future times shall try to focus upon extending research work related to the management of stress in those developing nations of the world where output on the research field concerning this subject of human resource and its proper maintenance has still been rather sparse.

These newer areas of inquiry include working from home in relation to stress management and the provision of digital wellness guidance. Limitations regarding this study need to be duly acknowledged, not least reliance on one database, the Web of Science, which may exclude relevant studies published elsewhere. Future bibliometric studies need to involve a greater amount of diversity for different databases toward more comprehensive understanding of the literature.

5. FUTURE SCOPE AND LIMITATION:

It identifies a host of expected areas of research attention, including for deeper research efforts on stress management in developing countries and long-term effects of several coping strategies across different sections. It enables the possibility for researching stress management in developing streams such as virtual health coaching or remote working itself. One of the limitations of this analysis is that it is based on the Web of Science database, which may exclude related research published in other databases. Future research should include a wider range of data sources to provide a more comprehensive understanding of the literature.

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