The Role of Autosuggestion in Hypertension Management and Quality of Life Improvement Among Elderly: A Bibliometric Analysis and Emerging Trends

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Abstract: Hypertension is a significant health concern, particularly among the elderly. It often results in a reduced quality of life and an increased risk of other health conditions. While pharmaceutical treatments are commonly used, non-pharmacological approaches such as autosuggestion are showing promise as alternative treatments. This study presents a thorough bibliometric analysis of research trends related to using autosuggestion to treat hypertension and enhance the quality of life for the elderly. Data was gathered from Scopus' primary academic database covering 1969 to 2024. Four thousand seven hundred relevant publications were analyzed using VOSviewer and Biblioshiny to map research networks, identify keyword emergence, and examine citation trends. The findings indicate a growing number of studies, particularly in the last five years, with significant contributions from the United States, the United Kingdom, and Germany. The thematic analysis underscores the potential of autosuggestion in managing the blood pressure of the elderly through stress management and improving emotional well-being, which contributes to better hypertension control. However, there are research gaps, particularly in the clinical application and integration of autosuggestion with conventional therapies. This study identifies emerging trends and provides insights for future research, particularly in exploring the long-term impact of autosuggestion on elderly health outcomes. These findings offer a valuable contribution to the development of non-pharmacological interventions for hypertension management and suggest promising directions for future studies.

Keywords: Autosuggestion, Hypertension Management, Quality of Life, Elderly, Bibliometric Analysis

INTRODUCTION

Hypertension is one of the significant health problems faced by the elderly, where increased blood pressure can affect quality of life and worsen other health conditions. The prevalence of hypertension in the elderly increases with age and is often associated with the risk of complications such as heart disease and stroke (Liang et al., 2024). Therefore, hypertension management is critical to improve the quality of life of the elderly. However, in addition to the pharmacological approach, there is a need for psychological interventions that can help older people manage this condition independently. Hypertension is one of the common health problems among the elderly, and it can significantly impact their quality of life (Gruden, 1999). The quality of life of the elderly who suffer from hypertension is often affected by a variety of factors, including

physical, psychological, and social conditions. Research shows that hypertension can lead to a decrease in quality of life through adverse impacts on the mental and physical health of the elderly (Abdillah, 2020; Utami et al., 2021). For example, research shows that therapeutic lifestyle changes can improve the quality of life of the elderly with hypertension, especially in social activity and interpersonal relationships (Yusof et al., 2023).

Controlling hypertension in the elderly is crucial to improving their quality of life. Hypertension, gymnastics, and other physical activity programs effectively reduce blood pressure and improve quality of life (Astuti et al., 2023; Pamungkas et al., 2021). Hypertension gymnastics, for example, helps control blood pressure and improves the psychological and social well-being of the elderly (Diniyah & Sudaryanto, 2024). In addition, family support also plays a vital role in managing hypertension, where research shows that social support can improve the quality of life of the elderly (Dwi Anhari et al., 2023). The quality of life of the elderly who suffer from hypertension is also influenced by psychological factors such as depression. Research by Puspadewi and Rekawati shows that there is a significant relationship between the rate of depression and the quality of life of older people (Puspadewi & Rekawati, 2017). Depression can worsen the condition of hypertension and, conversely, create a cycle that is difficult to break. Therefore, it is essential to integrate psychological approaches in the management of hypertension among the elderly, including the use of autosuggestion techniques and other psychological interventions to improve their quality of life (Israfil et al., 2024; Utami et al., 2021).

In this context, it is essential to develop valid and reliable instruments to measure the quality of life of the elderly with hypertension, as done by (Febriana et al., 2023). With the right measuring tools, interventions can be tailored to meet the specific needs of the elderly, thereby improving the effectiveness of hypertension control and the quality of life of the elderly. Overall, controlling hypertension in the elderly requires a multidimensional approach that includes physical interventions, social support, and attention to mental health. Thus, the quality of life of older people can be significantly improved, allowing them to live healthier and more fulfilling lives.

Autosuggestion is when a person repeatedly uses positive statements to influence their subconscious mind (Myga et al., 2021), aiming to change behavior or a specific physical condition. In the context of health, autosuggestion is used as a tool to help individuals control various health conditions, including hypertension (Lu, 2023), through increased self-awareness, stress reduction, and changes in perceptions of their physical condition (Tejaswini & Shilpa, 2015). Autosuggestion is the process by which individuals repeat positive statements to themselves, aiming to influence their thoughts and behaviors unconsciously. This technique is rooted in the principles of self-hypnosis and cognitive behavioral therapy Cognitive Behavioral Therapy (CBT) (Sari et al., 2017), which emphasizes the power of thought in shaping emotional and physical health outcomes (Sari et al., 2017; Yang et al., 2023; Zargar et al., 2019). In hypertension, autosuggestion can help patients develop a more positive outlook on their condition, reduce stress, and promote healthier lifestyle choices (Manurung et al., 2022).

However, although several studies on the effect of autosuggestion on mental and physical health show positive things in its development, few studies still explore the specific effects of autosuggestion on hypertension control in the elderly. In addition, its impact on quality of life is still not fully understood. This bibliometric analysis seeks to identify research trends and gaps using autosuggestion that can be developed for hypertension management. The purpose and scope of this research study aim to analyze several existing literature related to the use and development of autosuggestion in hypertension control and its impact on the quality of life of the elderly. Through this bibliometric approach, we seek to identify research trends, underexplored areas, and critical scientific contributions to this field.

METHODS

This study uses bibliometric analysis to analyze and evaluate relevant literature (Nalbant et al., 2023). Bibliometric analysis has become essential in contemporary research, especially in health and medicine. This method provides insight into the structure, dynamics, and trends of the scientific literature (Q. Wu et al., 2020), allowing researchers, policymakers, and institutions to make informed decisions regarding research priorities and funding allocations for the activities.

The significant points and implications of bibliometric analysis, especially in hypertension research, are its ability to identify research trends and hotspots. Bibliometric analysis allows researchers to identify emerging trends and hotspots in specific areas, such as hypertension. By analyzing publication patterns, citation frequency, and co-authorship networks, researchers can discern which areas have appeal and require further exploration. For example, the research conducted (Karabaeva, 2023; Zhang et al., 2022) has effectively leveraged bibliometric techniques to map the hypertension research landscape, revealing critical areas of concern, such as the relationship between dietary factors and blood pressure regulation and evaluating the impact of the research. The effect of the study can be assessed quantitatively through bibliometric indicators such as H-index, number of citations, and publication volume. This metric provides a clear picture of the influence and reach of a particular study or journal. For example, an analysis (Devos & Ménard, 2020) of two decades of hypertension research illustrates how bibliometric indicators can reflect the evolution and impact of research outcomes in this critical area of public health.

Bibliometric analysis can reveal collaboration patterns between researchers, institutions, and countries. Understanding these networks can encourage interdisciplinary collaboration and international partnerships to address complex health issues such as hypertension (G. Wu et al., 2024). Guiding Future Research Directions, Policymakers can leverage bibliometric insights to shape health policies and allocate resources effectively (Ng et al., 2023). Bibliometric analyses conducted by (Ellegaard & Wallin, 2015) emphasize the importance of using bibliometric data to inform policy decisions and improve health outcomes. Inform Policies and Practices: By understanding research trends and impacts, stakeholders can prioritize activities to address pressing public health challenges (Song & Seo, 2023). However, although this method has provided valuable insights, there are still limitations and considerations (Gultawatvichai et al., 2023); combining bibliometric data with qualitative evaluation can improve the interpretation of scientific outputs.

For this study, all data were collected from Scopus' leading database, including publications related to autosuggestion, hypertension, quality of life, and the elderly. Data is collected based on the keywords used for the search, the research period, and the number of articles analyzed. In this activity, keywords such as "autosuggestion," "hypertension management," "elderly," "quality of life," "bibliometric analysis," "blood pressure," "pharmacological," "non-pharmacological" were used and successfully searched for relevant articles during the period 1969–2024. The search for articles in the Scopus database was carried out in several stages of search with the keywords "autosuggestion" OR "self-suggestion" OR "Hypertension management" AND "Quality of Life" AND elderly, "autosuggestion" OR "self-suggestion" AND "Quality of Life" AND elderly. (TITLE-ABS-KEY ("autosuggestion" OR "Self-Suggestion") AND NOT TITLE-ABS-KEY ("blood pressure" OR "Hypertension management" AND "quality life") OR TITLE-ABS-KEY ("quality life" AND "elderly people") AND TITLE-ABS-KEY ("blood pressure" AND "non-pharmacology")) AND PUBYEAR > 1969 AND PUBYEAR < 2025. After the search and selection, 4700 articles were assessed that could be analyzed further and in-depth.

Researchers use publicly available Software Tools, including VOSviewer, R Studio, and Biblioshiny, to facilitate analysis. This software makes it easy to identify trends, network maps, map research trends, identify relationships between authors, and analyze citations (Huguet et al., 2023).

These devices are beneficial in visualizing global research networks and revealing key trends in this field (Bryant et al., 2021). The analyzed articles are determined by their criteria, be it Inclusion and Exclusion Criteria: determine the requirements for articles to be included and excluded from the analysis. Articles that include criteria discuss autosuggestion in the context of health control, especially hypertension in the elderly. Articles that don't focus too much on autosuggestion or quality of life are excluded from the analysis.

RESULTS

Based on the database and literature review on this occasion, descriptive statistical data from the identified literature was presented; the discussion consisted of identification and explanation in productive journals and published many scientific articles related to hypertension control approaches, pharmacological and non-pharmacological health approaches, then several authors who were relatively productive and consistent in writing about autosuggestive development, hypertension control, the elderly, quality of life and blood pressure control including public health. This study also discusses collaboration between countries, including Indonesia, in its participation in developing non-pharmacological treatment approaches.

Then, the relationship between health institutions worldwide is also analyzed by dividing into several analysis clusters keywords that emerge from several articles researched related to autosuggestive development, hypertension control, the elderly, and public health in general, identifying thematic trends and other emerging themes, and identifying collaborative relationships and the author's relationship with other authors worldwide. For more details, see the following display.

1. The most published journals.

The following image visualizes the world's scientific journals that publish scientific articles related to topic development.

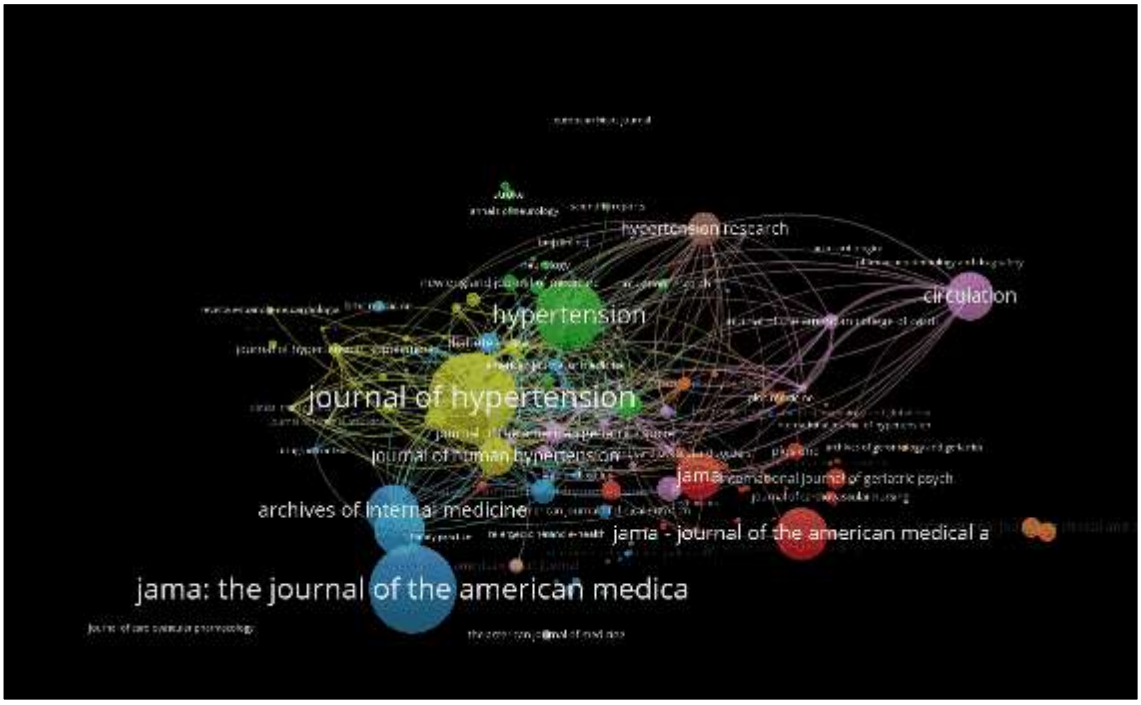

Figure 1. World Scientific Journal, which actively publishes scientific articles related to the development of non-pharmacologic approaches in controlling hypertension and the quality of life of the elderly

In the network map, it can be seen that the Journal of Hypertension can be said to be the Main Center of all existing journals. The Journal of Hypertension stands out as the largest node or

point on this map; this node shows that this journal is one of the primary reference sources in hypertension research worldwide. The nodes or points of these journals appear relatively small compared to hypertension-specific journals. However, they are still strongly connected in this network, indicating that their contribution to the spread of cross-disciplinary research is going well. Suppose you look at the Journal Archives of Internal Medicine and the Journal of the American Geriatrics Society. In that case, these two journals are often cited, which shows and convinces us that hypertension is frequently discussed in the context of diseases suffered by the elderly population and other accompanying comorbid diseases.

The strong association between cardiovascular journals and hypertension suggests that cardiovascular disease is a topic often associated with hypertension research. Although smaller, multidisciplinary journals are also involved in this network, they play a role in spreading cross-disciplinary research. This decomposition provides an overview of the role of scientific journals in disseminating research, especially related to hypertension and associated diseases. It shows how collaboration between journals contributes to developing knowledge in this field.

2. Productive Writer

Based on the author's collaborative network map, further analysis and interpretation can be made narratively related to research on autosuggestion, hypertension management, elderly care*, and quality of life*. The data can be re-analyzed in the following visualization.

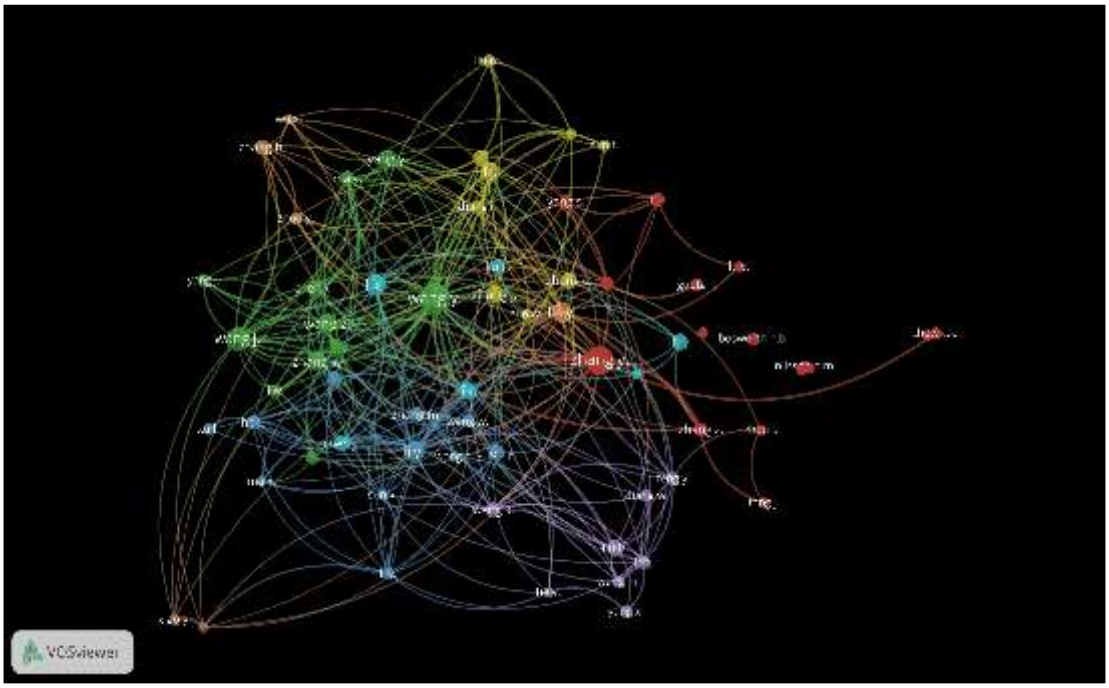

Figure 2. Map of the network of connectivity between authors conducting research in the fields of autosuggestion, hypertension management, elderly, and quality of life

This network map shows the connectivity between authors conducting research in the field. Each node (point) represents an author, and the connecting line indicates the collaboration between those authors. The size of the nodes in the network map shows the author's productivity, while the connecting lines between the nodes show the frequency of collaboration; for more details, we re-analyze the following image visualization. You can see the most productive author on the network map above and make it a Network Center. In this map, it can be seen that researchers Wang, Zhang, and Liu are the most prolific authors and are at the center of this network map. They have large nodes and are connected to many other writers worldwide. This indicates that they are

the leading researchers who are heavily involved in research collaborations related to autosuggestion, hypertension management, and improving the quality of life in the elderly (Sari et al., 2017). These authors play a crucial role in leading or directing research focused on managing hypertension using non-pharmacological approaches such as autosuggestion, which aims to improve the quality of life of the elderly population.

In this network map, it is also seen that there is a multinational collaboration, especially among authors with familiar names in the East Asian region, such as from China and Taiwan; this condition indirectly indicates that there is a regional focus on this research. Some writers, such as Chen, Yang, and Wu, are also seen to be closely connected, suggesting a relatively robust network of collaboration between them. In addition, there was involvement from authors from other regions, such as Chow C.K., Huffman M.D., and Rodgers A., which showed that this research also received attention outside the Asian region, especially from Western countries, which can also provide or signal the existence of global collaboration and synergy in research on the development of autosuggestion and hypertension (Sari et al., (2016)

3. Collaborative Between Countries

Collaboration between countries related to research can be re-analyzed in the visualization of images.

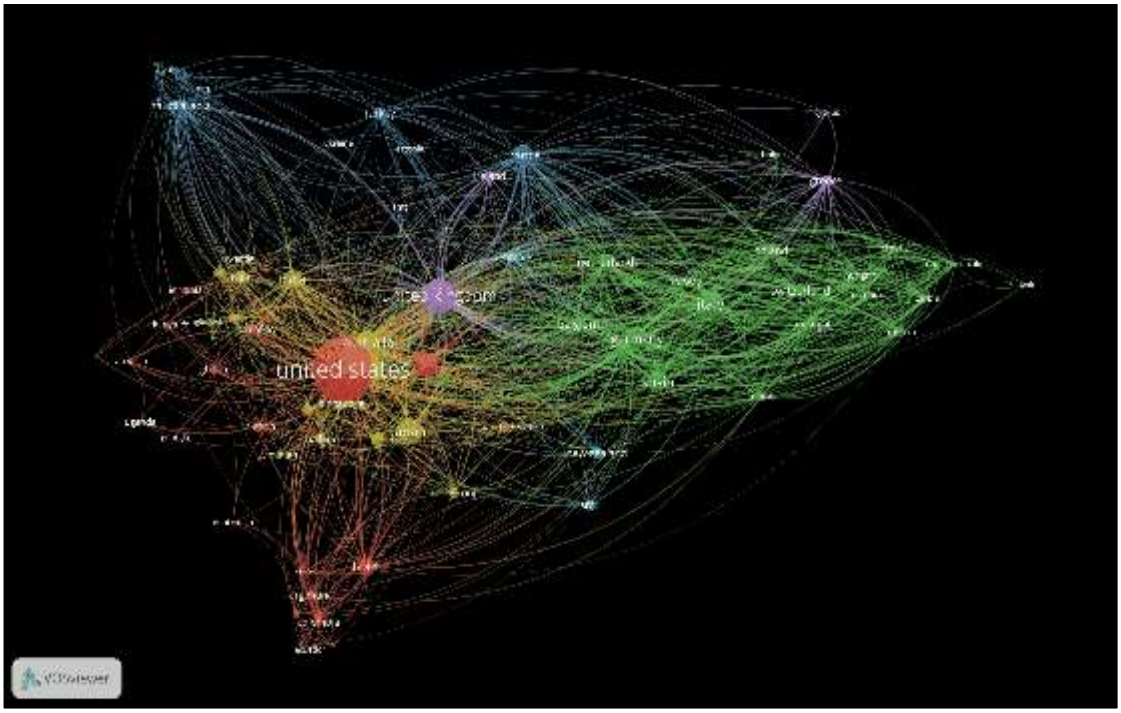

Figure 3. Network map of the collaboration between American and European countries in conducting research in the fields of *autosuggestion, hypertension management, elderly, and quality of life*

The network map shown above shows international collaboration between countries in related research. Each node (point) represents a single country, and the line connecting the nodes indicates the frequency and strength of cooperation between nations. The size of the nodes represents the country's level of scientific contribution or productivity. In contrast, the color of the lines and nodes indicates the intensity of collaboration in a given period, with the color scale from yellow (new) to blue (old).

The United States of America on the map is the main center of collaboration. The United States is the main center of this collaborative network, with the largest node in the middle. This

signifies that the United States has the most significant contribution to related research and is a collaborative partner of many other countries worldwide. Close collaboration is seen with other major countries such as the United Kingdom, Germany, Canada, France, and Japan. These countries also have large nodes, significantly contributing to global research on this topic—Europe is a vital collaboration area. In the European region, countries such as Germany, France, the United Kingdom, Italy, and Spain show collaborative solid relationships, as seen from the many lines connecting these countries. Belgium, the Netherlands, and Sweden also collaborate with sizable nodes. These collaborations often occur in cross-border research that addresses scientific innovations in the medical and health fields.

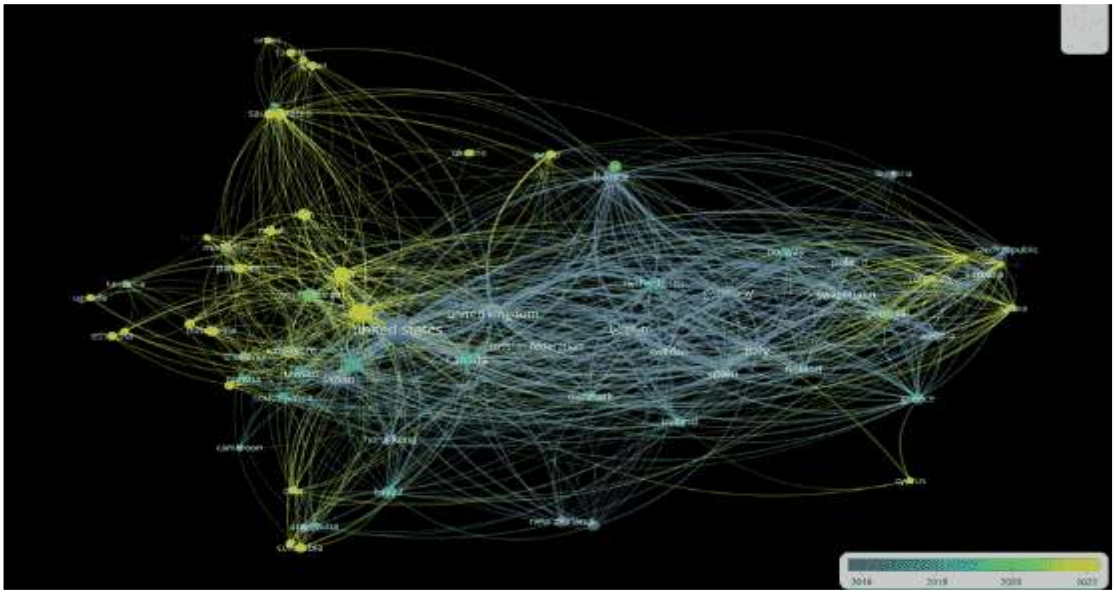

Figure 4. Map of the network of Collaboration between Asia Pacific Countries in conducting research in the fields of *autosuggestion, hypertension management, elderly, and quality of life*

A map of the collaboration network in Asia and the Pacific shows that Japan, China, Australia, and South Korea are the main centers of collaboration in Asia. This line connects them with the United States, Europe, and neighboring countries. China has shown increased cooperation in recent years (a more yellow line), showing rapid growth in scientific contributions and international collaborations. Collaboration is growing in developing countries. Some developing countries in Africa and Southeast Asia, such as South Africa, India, Indonesia, Malaysia, and Uganda, are also starting to show involvement in global collaboration, albeit with smaller nodes. These countries are seen to be connected to research centers in the United States, Europe, and Asia. Indonesia is also involved in this network, with lines showing collaborative relationships, particularly with other Asian countries and the United States**.**

This trend of collaboration based on time is based on the color scale; we can see that some countries are showing more recent collaborations (represented by yellow) while others have had long-term collaborations (represented by blue). Countries such as the United States, the United Kingdom, China, and India appear to be participating in more recent collaborations (2018-2022), signaling an increase in recent scientific activity. Some other countries, such as Germany and France, show a pattern of cooperation that has lasted longer. Based on the network map above, the United States is a leading country in global research collaboration, with significant contributions and close relationships with European and Asian countries. Europe is a region that is very active in scientific collaboration, with countries such as Germany, the United Kingdom, and France playing

a significant role. There is strong growth in international collaborations in Asia, China, Japan, and South Korea, with increasing involvement in global research.

Developing countries such as India, Indonesia, and South Africa are beginning to be more actively involved in these research networks, albeit on a smaller scale. Overall, this collaborative network shows that research related to this topic is highly global and affects many countries with varying levels of contribution, with a growing trend of collaboration. This presentation provides a comprehensive overview of international cooperation as seen from the network map, highlighting the role of key countries in global research and collaboration trends over time.

4. Collaborative relationships between Institutions

The analysis and interpretation of the narrative of the inter-institutional relationships involved in research related to autosuggestion, hypertension management, quality of life, and the elderly can be re-analyzed in the following image visualization map. Based on the network map that has been made, the following is an analysis and interpretation of the narrative of inter-institutional relationships involved in research related to autosuggestion, hypertension management, quality of life, and the elderly. Harvard Medical School (Boston) is considered a significant institution in this field, with a strong presence and a central position. The school collaborates with other institutions, such as the Department of Preventive Medicine and the Division of Cardiovascular Medicine, to research hypertension management through non-pharmacological approaches such as self-reporting and lifestyle changes. Departments of Epidemiology at some universities also play an essential role in population-based research to evaluate epidemiological risk factors associated with hypertension.

The research has been conducted for decades, with many collaborations between institutions such as Harvard Medical School and the Department of Preventive Medicine. However, some institutions, such as the Department of Population Health, have been more involved in the research. The study also focuses on the role of non-pharmacological approaches in managing hypertension, especially in the context of an aging population. The study highlights the importance of collaboration between different institutions in research on hypertension, hypertension, and lifestyle changes, as well as the potential for future research to broaden understanding of these topics.

5. Frequently appearing keywords

In this regard, several main keywords were obtained after research and study. For more details, we can re-explain this visualization.

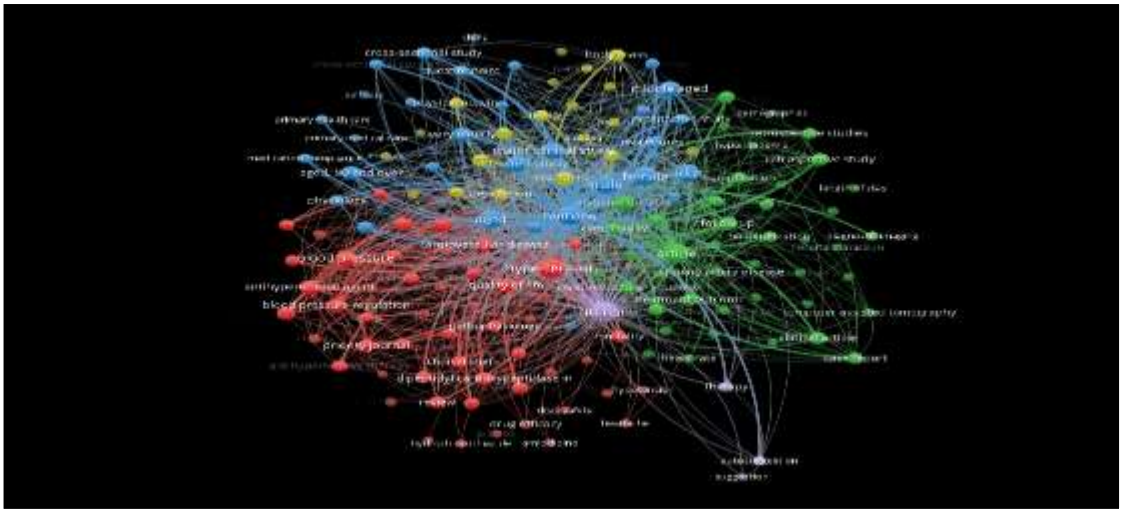

Figure 5. Visualization Map Keywords that often appear in research in the fields of *autosuggestion, hypertension management, elderly, and quality of life*

From the 4700 articles studied, several themes emerged from the literature, including the relationship between autosuggestion and blood pressure reduction, improving quality of life through *non-pharmacological interventions*, and the role of *stress* in hypertension in the elderly. Research focusing on applying autosuggestion in community-based interventions is also a growing trend. This map shows the relationships between keywords often appearing in publications related to hypertension, quality of life, and management interventions such as autosuggestion. Each node (point) on the map represents a keyword. In contrast, the line connecting the nodes indicates the frequency of the occurrence of that keyword simultaneously in a single article or research. The color of the nodes indicates a different cluster or theme. Interestingly, we try to focus on *the autosuggestion* research; we get a visualization map below.

A visualization map illustrates a network of keywords related to autosuggestion within the context of hypertension management and the quality of life of the elderly. The keyword "autosuggestion" holds a central position in the map, indicating its significant connection to various essential aspects of the research. Key themes that emerge include stress and relaxation. It's evident that "stress" and "relaxation" are closely linked to "autosuggestion," suggesting that numerous studies explore how autosuggestion techniques can help reduce stress, subsequently impacting blood pressure (McCraty et al., 1999).

Self-hypnosis and Autogenic Training: A strong correlation exists between "autosuggestion" and "self-hypnosis" as well as "autogenic training." Research often discusses these techniques as similar or complementary autosuggestion methods to help patients manage health symptoms, including hypertension (Yek & Elkins, 2021). Treatment and Improvement: The association between "autosuggestion" and the keywords "treatment" and "improvement" underscores a focus on research addressing the effectiveness of autosuggestion as part of treatment strategies. A study by Özcan & Avcı (2022) emphasizes the significance of autosuggestion-based interventions in improving the quality of life of the elderly, particularly in hypertension management.

Pain and Anxiety: The association between "autosuggestion," "pain," and "anxiety" suggests that autosuggestion is also explored in the context of pain management and anxiety disorders. Research by Seshadri et al. (2023) reinforces the relevance of autosuggestion in managing various aspects of health. Motivation and Ability: The keywords "motivation" and "ability" frequently appear alongside "autosuggestion," indicating attention to the role of internal motivation and individual abilities in successful health management.

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Motivation and Ability: The keywords "motivation" and "ability" frequently appear alongside "autosuggestion," indicating attention to the role of internal motivation and individual abilities in successful health management. Implementing autosuggestion, especially in managing long-term health conditions, aligns with research (Locke, Gago, et al., 2024; Shafer et al., 2023). Overall, this network map shows that autosuggestion not only plays a role in the management of hypertension but can also be associated with a broader range of psychological and health approaches, such as stress management, anxiety treatment, as well as relaxation techniques such as *autogenic training* and *self-hypnosis furthermore, autosuggestion can help hypertensive patients, especially the elderly, in improving their health condition without over-reliance on pharmacological treatment* (Breznoscakova et al., 2023; Sari et al., 2017).

6. Visualization of the Author's Citation

This network map also shows research groups segmented by topic focus. This map shows that these authors belong to several clusters with different color markers, representing slightly different research focuses in the same field. Green cluster: Appears to have a focus on hypertension management, especially related to *the elderly*, where authors such as Zhang and Wang are involved in many publications. Red cluster: Seen focusing on the relationship between *autosuggestion and quality of life*. Authors such as Zhang Y. and Huffman M.D. were involved in publications that examined the impact of non-pharmacological techniques, such as autosuggestion, on improving the quality of life of hypertensive patients. Blue cluster: Focus on hypertension management methodologies, with particular attention to population-based interventions and epidemiology, as seen from the involvement of authors such as Yang and Liu.

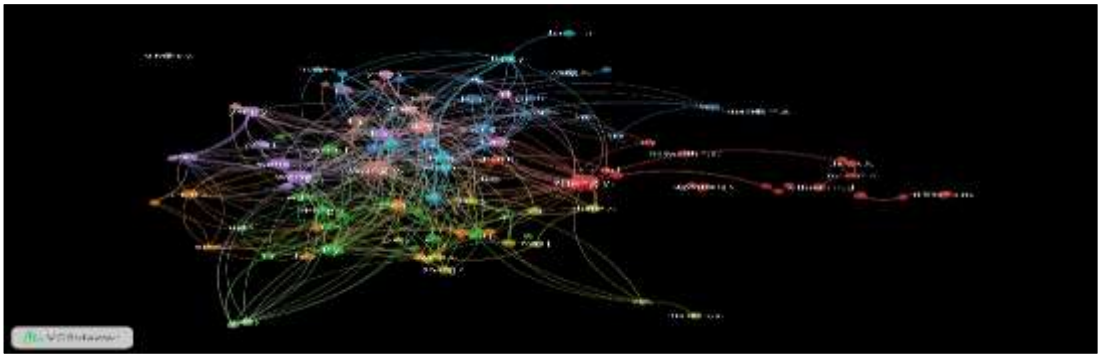

Figure 6. Citasi visualization network map for the author as a reference for conducting research in the fields of *autosuggestion, hypertension management, elderly, and quality of life*

High Collaboration Rate. Many of the authors on this map show close collaborative relationships, which can be seen from the many connecting lines between them. This suggests that research in this area tends to be cooperative, with many studies conducted in teamwork or inter-institutional. Researchers Wang and Liu are at the center of several collaborations involving researchers from different countries and institutions, demonstrating that they have played an essential role in connecting various researchers and facilitating collaboration on significant projects.

This map also illustrates research focusing on older people and improving their quality of life. Many of the authors on this map are involved in research that links *hypertension management* in the elderly to *an autosuggestion approach*. The management of hypertension in the elderly is an important topic, and the impact of psychological interventions, such as *autosuggestion*, on *quality of life* is a significant focus in these studies. Authors such as Zhang and Chen may be involved in

research that evaluates the effectiveness of autosuggestion as a self-management technique that can help hypertensive patients, especially the elderly, improve their health without relying too much on pharmacological treatment.

From the exposure to the map above, we can know that the authors Wang, Zhang, and Liu are the authors that are most admired by many people in this network, with many collaborations in the field of research related to *autosuggestion, hypertension management*, and *quality of life* in *the elderly*./older people. International cooperation is crucial in this research, with solid connections between authors in Asia, North America, and Europe. This shows that this topic has global relevance. Research in this area is divided into several issues, including hypertension management, autosuggestion techniques, and research on the impact of *non-pharmacological interventions* on quality of life. There is a synergy between scientific research in the field of cardiovascular disease management and psychological techniques such as autosuggestion to assist elderly patients in improving their quality of life; this description outlines in detail the authors' involvement in research related to *autosuggestion* and *hypertension management*, as well as how the collaboration between them helps to develop this field of research globally.

7. Identify Trends from Emerging Theme Themes

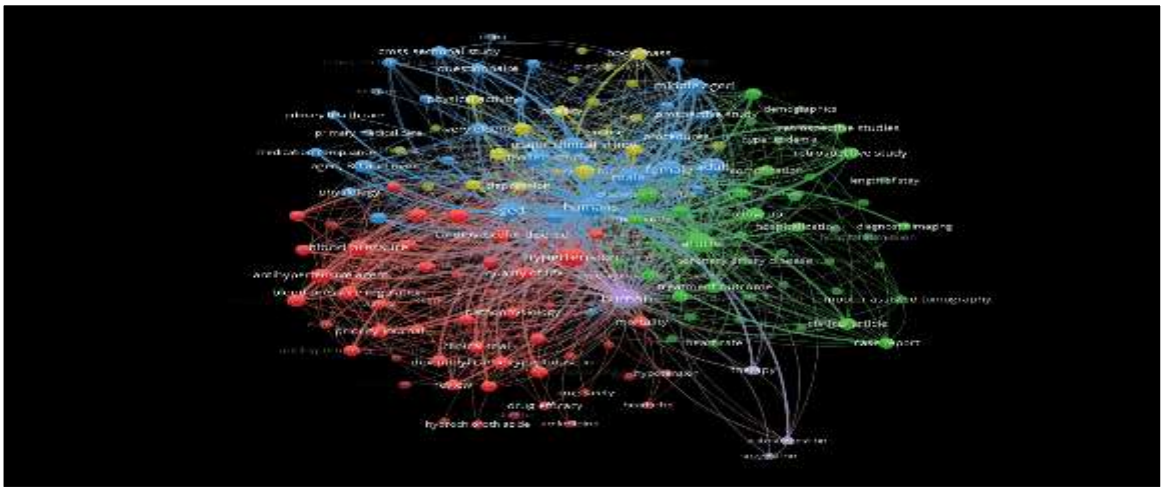

Figure 7. Visualization of the Development of Trends and Research Themes related to *autosuggestion, hypertension management, elderly, and quality of life*

Here are some key findings from this *Keywords Co-occurrence* analysis seen from the color clusters that emerged: Red Clusters (*Hypertension and Pharmacological Agents*). Main Focus: This cluster is dominated by hypertension and pharmacological treatment keywords. Research in this cluster focuses on the effectiveness of antihypertensive drugs, such as *dipeptidyl carboxypeptidase inhibitors* and *hydrochlorothiazides*, as well as clinical trials evaluating the outcomes of drug-based therapies (Devos & Ménard, 2020; Goverwa et al., 2014). This suggests that most research focuses on pharmacological approaches to hypertension control, an essential aspect of managing this disease. Green Cluster (*Clinical Studies and Patient Outcomes*). This cluster is centered on keywords such as *treatment outcomes, case reports*, and *clinical articles*. These clusters focus on treatment outcomes and clinical case reports related to hypertension, comorbidity management, and post-diagnosis care (Etienne Ngeh, 2023). Important Keywords: Terms such as *hospitalization, follow-up,* and *length of stay* reflect that studies here often relate to patient clinical outcomes, length of stay, and effectiveness of interventions over some time.

Blue Cluster (Population Characteristics and Epidemiological Studies). This cluster includes research that studies the effects of hypertension on specific demographic groups, such as women and the elderly. Keywords such as *comorbidity* and *cardiovascular disease* show a close

relationship between hypertension and other related diseases, often the focus of epidemiological research (Bersch-Ferreira et al., 2024; Etienne Ngeh, 2023). Research in this cluster is essential to identify risk factors and population characteristics that can affect the management of hypertension.

Purple Cluster (Non-Pharmacological and Psychological Intervention): This cluster highlights non-pharmacological techniques, including autosuggestion, for managing hypertension. Although research on autosuggestion and psychological approaches is still developing, keywords such as self-care and therapy indicate the potential for non-pharmacological interventions to enhance the quality of life for hypertensive patients (Jobe et al., 2023; Masilela et al., 2022). This suggests further research, particularly in integrating psychological techniques with medical approaches. It also indicates that autosuggestion techniques are less widely accepted than pharmacology-based therapies. Yellow Cluster (Physical Health Indicator): This cluster is related to physical risk factors that affect hypertension, such as body mass and physical activity. Research in this cluster suggests that preventive approaches, including weight management and increased physical activity, can contribute to controlling blood pressure (Ozoemena et al., 2019). It underscores the importance of a healthy lifestyle as part of a hypertension management strategy.

Analysis: The analysis shows that current research on hypertension control is still predominantly focused on Pharmacological Therapy. Most studies concentrate on pharmacological treatment and clinical trials for hypertension (Goverwa et al., 2014; Tucker et al., 2017), with many exploring the effectiveness of antihypertensive drugs. While techniques such as autosuggestion are beginning to be studied, research in this area has not been as popular as medical therapy. This indicates a significant opportunity for further research in non-pharmacological interventions, such as autosuggestion techniques (Hu et al., 2024; Liu et al., 2023), which can help lower blood pressure and improve quality of life. The study also emphasizes clinical outcomes and specific populations, focusing on demographic groups (women, the elderly) as well as on comorbidities that often co-occur with hypertension, such as diabetes and cardiovascular disease (Hedayati et al., 2011; Roseleur et al., 2023).

8. Analisis *Co-Authorship Analysis*

This visualization map seeks to analyze the most productive authors. We will analyze it again on the following visual map for more details.

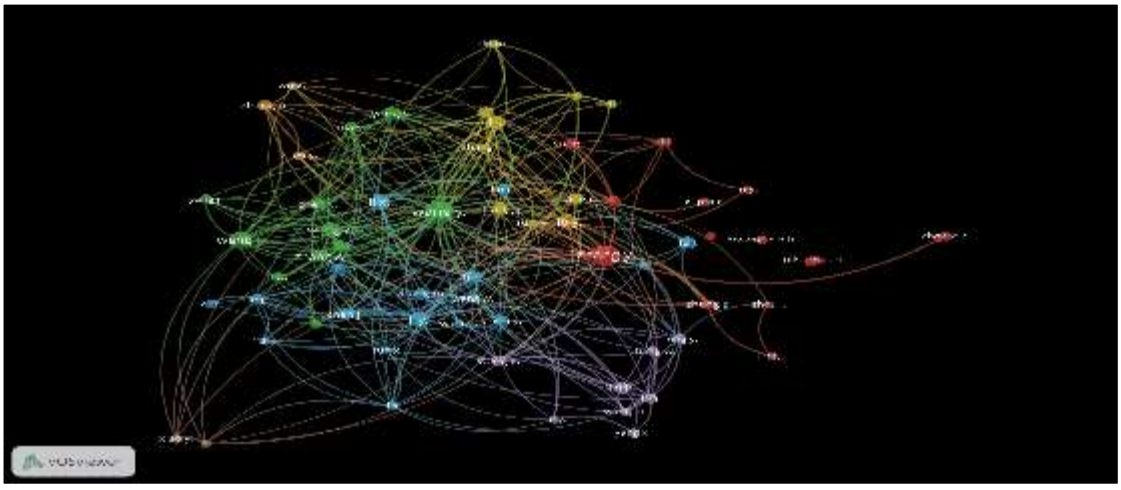

Figure 8. Map of the network of collaboration between researchers in the world in conducting research in the fields of *autosuggestion, hypertension management, elderly, and quality of life*

The analysis showed an increase in the number of publications over the years. Most related publications have appeared in the last five years, showing a growing interest in using

autosuggestion in managing hypertension. *Co-Authorship Analysis*: Analyzing the relationship between authors, researchers *Wang, Zhang*, and *Liu* are the most prolific authors and are at the center of the network map, while collaboration between countries and the trend of collaboration-based research reflects the rapid growth in scientific contributions and international collaborations (Guo et al., 2021; Wang et al., 2023).

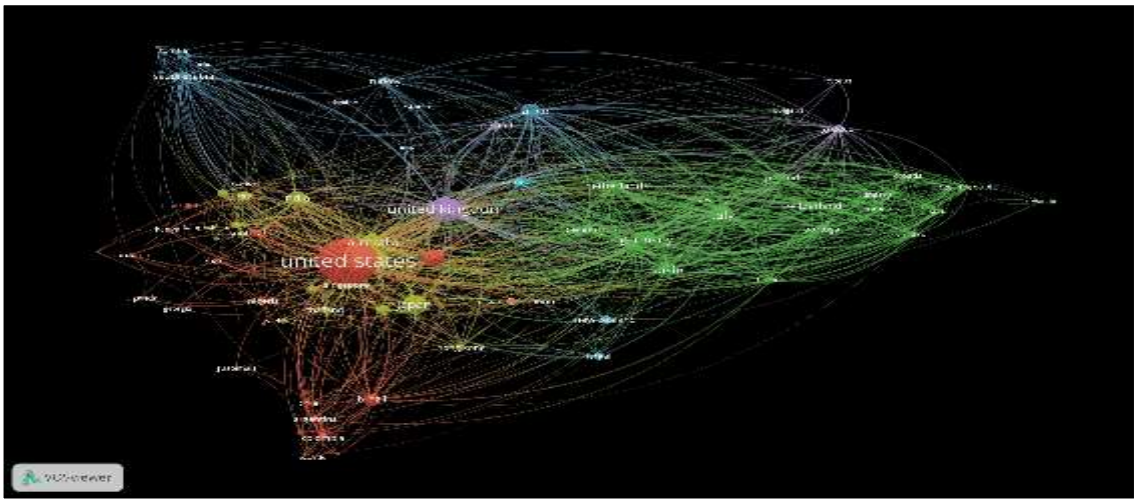

Figure 9. Map of the network of Collaboration between Countries in the world in conducting research in the fields of *autosuggestion, hypertension management, elderly, and quality of life*

The analysis of collaboration between authors shows significant cooperation between developed countries, especially the United States, the United Kingdom, and Germany. Collaboration between institutions is also increasing, demonstrating great global interest in this topic. Indonesia, for example, engages in this network with lines indicating collaborative relationships, particularly with other Asian countries and the United States (Hartaningrum et al., 2022; Zargar et al., 2019)

DISCUSSION

New trends in the literature on using Autosuggestion for stress and hypertension management: Autosuggestion has become an increasingly popular method for managing stress and mental health issues associated with hypertension (Sonia, 2023). This technique is used as a non-pharmacological psychological approach to assist patients, especially the elderly, in reducing blood pressure by increasing self-control and calming the mind. Emotional Well-Being: Trends show that autosuggestion is beginning to be integrated into managing emotional well-being, indirectly positively impacting blood pressure. Seniors who experience chronic anxiety or stress, which often contributes to high blood pressure, may benefit from the use of autosuggestion techniques (Wahyuni et al., 2021).

Autosuggestion as a Support for Therapy Adherence: Patient adherence to hypertension therapy is often a challenge, especially in the elderly population. New trends suggest that autosuggestion can play a role in encouraging adherence to therapy programs. By training the mind to focus on the benefits of medical therapy, autosuggestion can help patients feel more positive about their treatment and encourage regularity in taking medication (Maharani & Syafrandi, 2018). Using Autosuggestion as a Complementary Technique in a Holistic Approach: Autosuggestion is now increasingly considered part of a holistic health approach, combining psychological techniques with pharmacological treatment (Silvanasari et al., 2023). In some studies, autosuggestion is treated as an adjunct method that can reinforce conventional medical therapies, thereby improving healthcare outcomes in older adults with hypertension.

Increased Interest in the Use of Autosuggestion for the Elderly: There is a growing interest in using autosuggestion as a technique to improve the quality of life of the elderly, which not only addresses hypertension but also improves overall well-being (Zargar et al., 2019). Autosuggestion is thought to help manage various age-related problems, such as anxiety, insomnia, and feelings of helplessness (Liu et al., 2021; Myga et al., 2022). The gaps that have not been widely researched in this analysis consist of the following: clinical application of autosuggestion in medical settings: Despite the increasing interest in the use of autosuggestion, there is still little research exploring how this technique can be applied in a formal clinical setting (Anita, 2023). Many studies currently focus only on the use of autosuggestion in the context of self-directed or non-formal therapy, while more systematic use in clinics, hospitals, or medical programs has not been widely explored (Sari et al., 2017; Upadhya et al., 2021). Integration of Autosuggestion with Pharmacological Approaches: The collaboration between autosuggestion and pharmacological treatment has not been explored in depth. For example, the potential integration of autosuggestion with hypertension medications could be a promising area to explore (Alhazmi et al., 2024; Byfield et al., 2024). More research is needed to explore how autosuggestion can strengthen medical therapies' effectiveness and improve treatment adherence. Long-Term Studies on the Effectiveness of Autosuggestion: Most of the existing research on autosuggestion currently focuses on short-term impacts, while longitudinal or long-term studies that observe the sustained effects of autosuggestion on the management of hypertension are still very few (Wahyuni et al., 2021). Long-term studies can help understand the impact of autosuggestion on quality of life and hypertension control over a more extended period and assess the durability and effectiveness of these techniques at different ages.

Autosuggestion on Populations with Different Backgrounds: Most existing research comes from developed countries, which often have better access to health and higher health knowledge. However, populations in developing countries have not been widely explored in this context (Shen et al., 2023). Further research is needed to understand the effectiveness of autosuggestion in resource-limited countries or populations with lower health literacy. Social and Cultural Influences on the Effectiveness of Autosuggestion: Research exploring the influence of social and cultural factors on the success of autosuggestion techniques is limited. For example, in some societies, mental or psychological techniques may be poorly accepted or understood (Myga et al., 2024). Therefore, it is essential to study how socio-cultural variables affect the acceptance and effectiveness of autosuggestion, especially in older populations that may have strong cultural backgrounds.

Then, the issue of the effectiveness of autosuggestion for other physiological conditions is discussed. Most current research focuses on autosuggestion for managing hypertension and stress. However, there is still room to explore how this technique can be applied to other physiological conditions, such as other chronic diseases that require long-term self-management, including diabetes, heart disease, and respiratory problems. The findings of this study make an essential contribution to the theory of self-control, especially in the context of psychological interventions for managing physical health. Autosuggestion, which was initially widely applied in stress management, has evolved into a technique that can be used to manage physiological conditions directly, such as hypertension (Hermes et al., 2004; Rahmawati, 2020; Susanto et al., 2023).

This broadens our understanding of how individuals can use their mental powers to influence their health conditions, particularly in the case of chronic diseases such as hypertension. In the context of the elderly with hypertension, the use of autosuggestion can be seen as a new development in the theory of psychological intervention based on self-management. These findings support the idea that mental techniques can affect physical conditions through changes in

mindsets, anxiety levels, and perceptions of illness. In addition, this study reinforces the theory that effective self-management can improve the quality of life, especially in the elderly population, who tend to face many physical and mental challenges (Baratta et al., 2022; Rini, 2023). For health practitioners, especially clinicians and caregivers, autosuggestion can be used as an additional intervention to help the elderly manage hypertension and improve their quality of life. These techniques can be integrated into therapy programs or used independently by patients with appropriate training (Sari et al., 2016).

This research has important practical implications for clinicians, caregivers, and therapists who treat the elderly with hypertension. The use of autosuggestion can be an additional intervention that can potentially improve the quality of life of older people while helping them manage their blood pressure. Autosuggestion techniques, if taught and practiced correctly, can be an effective self-management tool for patients (Indrayani, Pujiastuti et al., 2023; Yanto et al., 2022). Clinicians and caregivers can integrate these techniques into a comprehensive therapy program that includes pharmacological and non-pharmacological approaches (Desrianti et al., 2022; Marlina et al., 2021). In addition, patients can use complementary therapies such as autosuggestion independently at home, with proper training, to be a sustainable and cost-effective solution. Therapists can also benefit from the use of autosuggestion to help older adults improve adherence to therapy, reduce medication-related anxiety, and increase a sense of self-control over their health conditions (Mulyanto et al., 2024; Setiadi et al., 2022). These implications suggest that autosuggestion can be used to manage hypertension and as part of a holistic health approach that focuses on improving emotional and physical well-being.

CONCLUSIONS

The study has unlocked several new trends in the literature, primarily related to using autosuggestion to manage hypertension, improve emotional well-being, and improve medication adherence. However, several research gaps still need to be filled, especially in the context of clinical application, integration with pharmacological treatment, long-term studies, and exploration of various social, cultural, and economic backgrounds. The results of the analysis show that the use of autosuggestion in hypertension control is increasingly attracting attention and is increasingly recognized as a potential technique to help manage hypertension, especially in the elderly population, especially in recent years. Research trends highlight the great potential of autosuggestion to help older people manage blood pressure and improve their quality of life, although there are still research gaps to be filled. This study provides important insights into the role of autosuggestion in controlling hypertension and improving the quality of life in the elderly. Bibliometric analyses show that the use of autosuggestion to manage hypertension is increasingly attracting the attention of researchers, especially in recent years. A key trend emerging from the literature is that autosuggestion can serve as an effective additional intervention to help older people better manage their blood pressure. However, gaps in the literature must be filled, particularly in the clinical application of autosuggestion and its integration with pharmacological therapies.

Future research may further explore the clinical effectiveness of autosuggestion in an integrated hypertension control program. This includes developing more formal and applicable autosuggestion training techniques in clinical settings. Longitudinal studies are also needed to evaluate the long-term impact of autosuggestion on the quality of life of older people and to understand whether these techniques can improve adherence to medical therapies over a more extended period. In addition, there is a need for more population-focused research in developing countries, which is often overlooked in the current literature. Thus, this study opens the door to looking at autosuggestion not only as an alternative therapeutic tool but as a holistic approach that

can help the elderly and other vulnerable populations face long-term health challenges, such as hypertension, and improve their overall quality of life.

The limitations of this study lie in the reliance on data available in specific databases and the fact that it may not cover all relevant publications. In addition, most of the studies analyzed came from developed countries, so these findings may be less representative of populations in developing countries. The study has some limitations, including reliance on data available in specific databases, which may not cover all relevant publications. This can limit the generalization of the findings. In addition, most of the studies analyzed came from developed countries so that these findings may be less representative of populations in developing countries. Future research should broaden the geographic scope and consider other variables that may affect the effectiveness of autosuggestion in hypertension control.

Conflict of Interest

The author declares that all of these articles do not have any conflict of interest or are related to this article's research, authorship, and publication activities.

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