

# Bibliometric Analysis of Clinical Leadership Studies: Trends and Insights from the Web of Science

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## ABSTRACT

Clinical leaders play a significant role in fostering collaboration among health professionals, effective communication and developing strategies for improving patient care. As a result, the number of studies related to clinical leadership has been increasing over time. However, the themes addressed in these studies and their temporal changes are not clear. Therefore, this study aims to examine the topics discussed in clinical leadership literature and the changes in these topics over time. To achieve the objectives of the study, research studies in the Web of Science were subjected to bibliometric analysis. The analyses were conducted using the bibliometrix in RStudio. The study revealed that research on clinical leadership has accelerated and increased since 2000s, and the countries contributing the most to literature are the United States, China, the United Kingdom and Australia. It was also found that some concepts such as autonomy were mostly discussed up until the 1980s, while recently clinical leadership has been more associated with engagement and improvement. The group most frequently involved in such studies were nurses. It is believed that the findings of this study provide a comprehensive summary of clinical leadership literature and offer detailed information on the subject to stakeholders.

**Keywords:** Clinical Leadership, Healthcare Services, Bibliometric Analysis, Science Mapping, Text Mining.

**JEL Classification Codes:** Yazar tarafından gönderilmeli

**Referencing Style:** APA 7

## INTRODUCTION

Clinical leadership is a dynamic field in healthcare in which clinical expertise and leadership skills together support the success of healthcare systems and the delivery of high-quality patient care. It is defined as the ability of healthcare professionals to influence, guide, and motivate their peers, while fostering a collaborative environment that enhances teamwork and communication. This enables the implementation of best practices, improves patient care, and supports a positive organizational culture (Wilson et al., 2020; Hill & Brocklehurst, 2015). Its significance lies in integrating clinical proficiency with leadership capabilities, which affect both operational and interpersonal aspects of healthcare delivery. Effective clinical leadership has a multi-faceted impact, extending beyond clinical outcomes to improvements in staff satisfaction, motivation, job performance, and organizational effectiveness (Duignan et al., 2020; Ennis et al., 2014). Research has shown that healthcare environments that prioritize strong clinical leadership tend to see higher levels of job satisfaction, better communication across teams and greater organizational commitment. Effective clinical leaders play a critical role in mitigating stress, reducing burnout, and promoting resilience among

healthcare professionals, which ultimately contributes to better retention rates and a healthier workforce.

One of the most vital functions of clinical leadership is its influence on healthcare quality. Studies show that clinical leaders who use clear communication, sound decision-making, and mentorship are more successful in implementing evidence-based practices and clinical guidelines, improving healthcare outcomes (Boamah, 2017; Sarto & Veronesi, 2016). By providing direction and ensuring that clinical staff adhere to established protocols and guidelines, clinical leaders help reduce variation in care delivery and improve patient safety. Clinical leaders also drive continuous improvement by identifying weaknesses, supporting problem-solving, and inspiring innovation within teams. Another critical role of clinical leadership is the promotion of accountability and transparency within healthcare organizations. They establish a culture of responsibility that holds healthcare professionals accountable for their actions and outcomes, supporting higher care standards and safer work environments. Leaders who foster transparency within healthcare teams are more likely to promote open communication, ethical behavior, and a strong commitment to patient-centered care (Mrayyan, 2022). This openness is particularly vital in

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complex and high-stakes health environments, where clear communication and adherence to safety protocols can make a significant difference in patient outcomes. Furthermore, clinical leaders serve as key facilitators of professional development and lifelong learning for healthcare staff. They ensure that employees have access to the training, resources, and support needed to enhance their clinical skills, stay up to date with the latest medical advancements, and progress in their careers. Through mentoring, supporting continuing education, and encouraging leadership development, clinical leaders contribute to the growth of healthcare professionals and the sector. In this way, clinical leadership fosters a culture of continuous improvement and professional excellence, which benefits not only the healthcare workers but also the patients they serve.

A review of the relevant literature on clinical leadership reveals effective clinical leadership significantly contributes to the improvement of the quality of work life, particularly for nurses, physicians, and other professionals involved in healthcare service delivery. Research highlights the importance of clinical leadership not only in improving staff satisfaction but also in fostering an environment that benefits patient care. In a study conducted by Li et al. (2021), it was found that the development of clinical leadership skills, along with the promotion of active coping strategies among healthcare workers, enhanced the quality of work life. This improvement in work life was subsequently reflected in the quality of healthcare services, demonstrating the interconnectedness of employee well-being and patient outcomes. Similarly, Boamah (2018) demonstrated that effective clinical leadership in nursing had a direct association with higher job satisfaction and the delivery of higher-quality care. This research underscores the critical role that leadership plays in influencing not only the internal work environment but also the external service outcomes. Beyond individual satisfaction, clinical leadership also influences hospital performance and service quality at an organizational level. Sarto and Veronesi (2016) conducted a study linked clinical leadership to various positive healthcare outcomes, showing that effective leadership enhances overall hospital performance, patient care quality and staff coordination. Their findings suggest clinical leaders play a pivotal role in driving improvements across all facets of hospital operations. In addition, Veronesi et al. (2014) argued that clinical leadership improves the efficiency of resource utilization, which is critical for enhancing operational performance and ultimately contributing to the financial health of hospitals. This demonstrates that

strong leadership not only has a direct impact on service delivery but also on the strategic use of resources. On the other hand, Stanley and Stanley (2017) highlighted that clinical leadership influences various dimensions of health, including value-based practices, innovation and organizational change. According to their research, effective clinical leadership facilitates the adoption of innovative practices, encourages necessary changes in healthcare settings and ensures that services align with contemporary healthcare values.

Although clinical leadership has been widely studied, a comprehensive understanding of its trends, thematic developments, and temporal changes remains limited. This gap highlights the need for a systematic examination of how clinical leadership research has evolved over time and which themes have emerged, declined, or remained central. Given the critical role of clinical leadership in healthcare, it is essential to explore the concepts, challenges and innovations that have shaped the field, providing valuable insights into its progression. For addressing this need, the present study conducts a bibliometric analysis of clinical leadership research systematically mapping the landscape of academic contributions. By analyzing publication patterns, key research areas, and shifts in focus, the study offers a structured overview of how the field has developed. This bibliometric approach highlights dominant themes and influential contributions, while also identifying emerging areas that require further investigation. Furthermore, the study provides a comprehensive synthesis of clinical leadership literature, summarizing trends, influential research directions and critical findings. Thus, it serves as a valuable resource for researchers, healthcare professionals, and policymakers seeking to understand the evolution of clinical leadership and its implications for practice. By identifying research gaps and opportunities, the findings contribute to shaping future studies, fostering further advancements, and supporting the development of effective leadership strategies within healthcare organizations. Ultimately, this study enhances the academic discourse on clinical leadership by providing a detailed and systematic exploration of its trajectory, reinforcing its importance in addressing contemporary healthcare challenges.

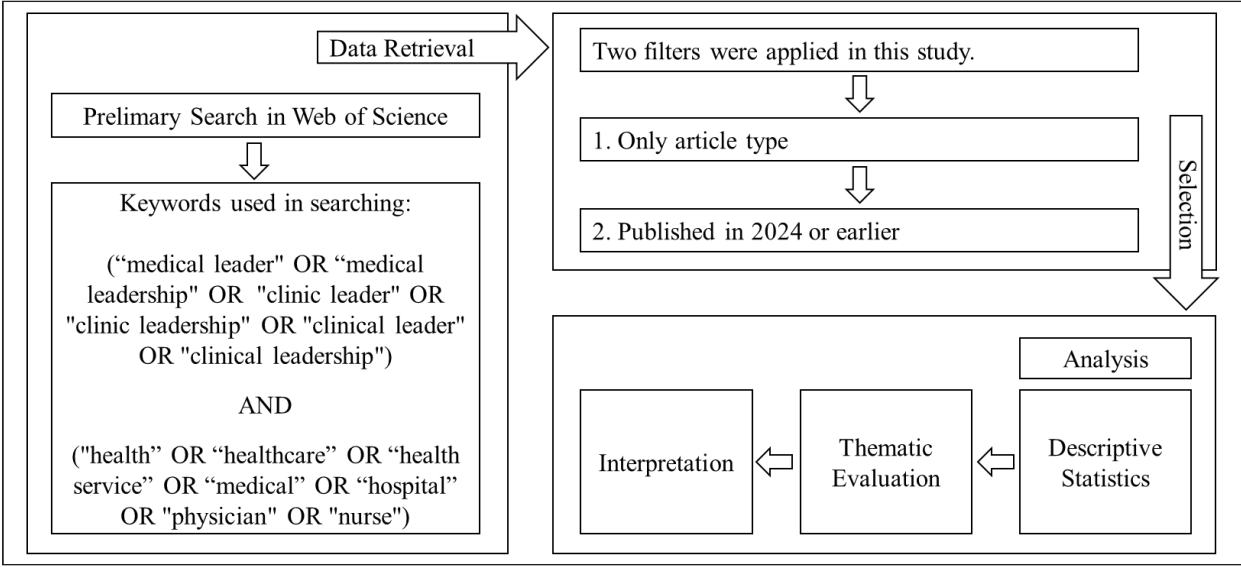


Figure 1. Research strategy and flowchart of the study

METHOD

The primary objective of this study is to analyze overall trends, key thematic areas, and the temporal evolution of clinical leadership research. Specifically, it seeks to identify publication patterns, emerging themes, and shifts in scholarly focus, providing a structured overview of how the field has developed. Understanding these dynamics is crucial for both researchers and practitioners, as it enables the identification of gaps in existing knowledge, facilitates the recognition of underexplored areas, and informs future research directions. To achieve these objectives, a bibliometric analysis was conducted using publications indexed in the Web of Science database, a widely recognized source for high-impact research. The dataset included only peer-reviewed journal articles to ensure research quality and consistency, while conference papers, theses, and books were excluded. The analysis was limited to studies published up to 2024, and publications from 2025 were excluded to avoid inconsistencies due to incomplete indexing. The methodology involved a systematic keyword-based search strategy using selected search terms and Boolean operators, as shown in Figure 1. These keywords were selected to capture a broad range of clinical leadership studies while minimizing irrelevant results. The retrieved dataset was analyzed using bibliometric techniques to extract insights on publication trends, influential authors and institutions, citation patterns, and thematic developments. Through this rigorous approach, the study provides a robust and data-driven examination of how clinical leadership research has evolved, offering valuable contributions to both academic discourse and practical applications in

healthcare leadership.

The keywords in Figure 1 were used to search the ‘topics’ section of Web of Science, which includes titles, abstracts, and author keywords. This approach ensured a broad yet relevant dataset by capturing studies focused on clinical leadership and minimizing irrelevant results. As a result of this rigorous search process, a total of 1,635 studies related to clinical leadership were identified, reflecting the academic interest and growing body of research in this field. To enable accurate bibliometric analysis, the metadata were downloaded in BibTeX format for seamless integration with tools for citation mapping, co-authorship analysis, and thematic clustering. During the extraction process, all 29 available metadata fields under the “custom selection” tab were carefully selected to obtain a comprehensive dataset. These fields included the title, abstract, authors, affiliations, publication year, journal name, DOI, keywords, citation count, references, and funding information. This extensive metadata selection enabled a more in-depth exploration of various dimensions of clinical leadership research, such as publication trends over time, key contributing authors and institutions, citation impact and evolving thematic areas. By incorporating a meticulous and data-driven approach, this study provides a valuable insight into the scholarly landscape of clinical leadership, offering a foundation for future research and practical applications.

The data analysis was conducted using the bibliometrix package in RStudio, which is widely utilized for performing bibliometric analyses. Before analysis, the dataset was cleaned to ensure accuracy and relevance. Specifically, studies published in 2025, and non-article publications

(conference proceedings, book chapters and theses) were excluded from the dataset. After applying these criteria, the final dataset included 1,205 articles. The bibliometric analysis encompassed various descriptive statistics, including the annual distribution of publications, allowing for an examination of the growth trends in clinical leadership research over time. Furthermore, the scientific contributions of different countries to the field were analyzed by evaluating publication output and international collaboration networks. In addition to descriptive metrics, the study also explored the evolution of key themes within literature. Changes in these themes were evaluated using keyword co-occurrence analysis and thematic mapping, which helped identify research hotspots and emerging topics. These insights provide a deeper understanding of the intellectual structure and future directions of the field. All analyses used Web of Science's Keyword Plus feature, which generates keywords from the titles of cited references.

## FINDINGS

As a result of the bibliometric analysis conducted in this study, the descriptive statistics of the analyzed publications are summarized in Table 1. Table 1 shows that the first clinical leadership study was published in 1982, marking the beginning of scholarly interest in the field. Between 1982 and 2024, 1,205 research articles on clinical leadership were published across 474 academic sources.

**Table 1:** Descriptive Statistics of the Studies Included in The Bibliometric Analysis

Description	Results
Timespan	1982:2024
Sources (journals, books, etc.)	474
Number of articles (documents)	1205
Annual growth rate	12.29%
Document's average age	7.86
Average citations per document	12.16
Total number of references used in the documents	31656
Number of keywords plus by Web of Science	1379
Number of author's keywords	2299
Number of authors	4964
Number of authors of the single-authored docs	137
Number of single-authored docs	151
Number of the co-authors per document	4.72
International co-authorships	16.76%

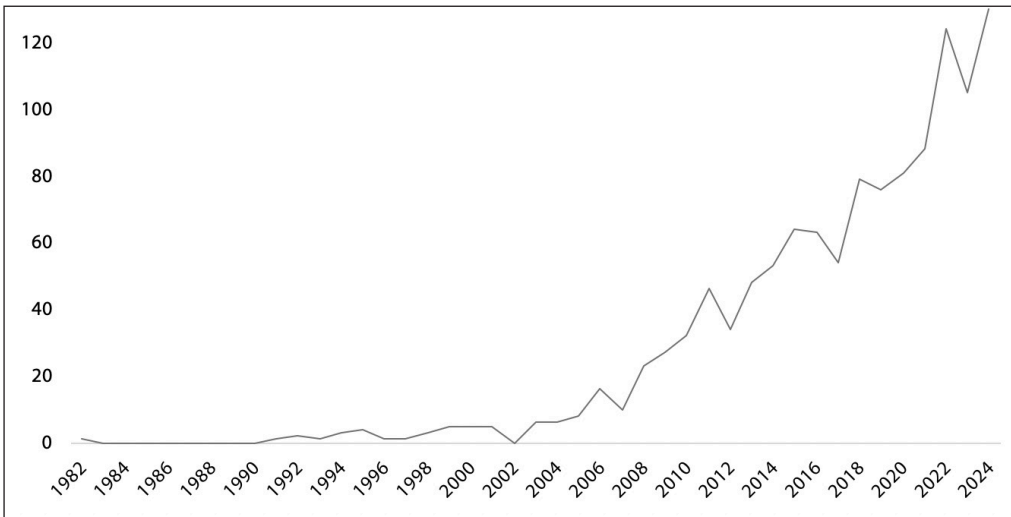
These studies collectively involved contributions from 4,964 authors, reflecting a diverse and widespread scholarly engagement with the topic. Among these publications, 151 articles were single authored, written by a total of 137 different authors, indicating that while independent research on clinical leadership exists, collaborative efforts remain predominant. The average number of authors per article is about five, indicating a strong tendency toward multi-authored studies consistent with the collaborative nature of clinical leadership research. International collaborations account for 16.7% of all publications, indicating growing global interest and cross-country cooperation in clinical leadership research.

Figure 2 shows the number of publications related to clinical leadership in the Web of Science database. Figure 2 shows that the first study was published in 1982 and that annual output remained below five until the early 2000s. After 2005, the number of clinical leadership studies increased exponentially. Specifically, the number of studies, which was below 5 in the 1980s, rose to 16 in 2006, 32 in 2010, and 81 in 2020. By 2024, the total number of studies related to clinical leadership worldwide had reached 130.

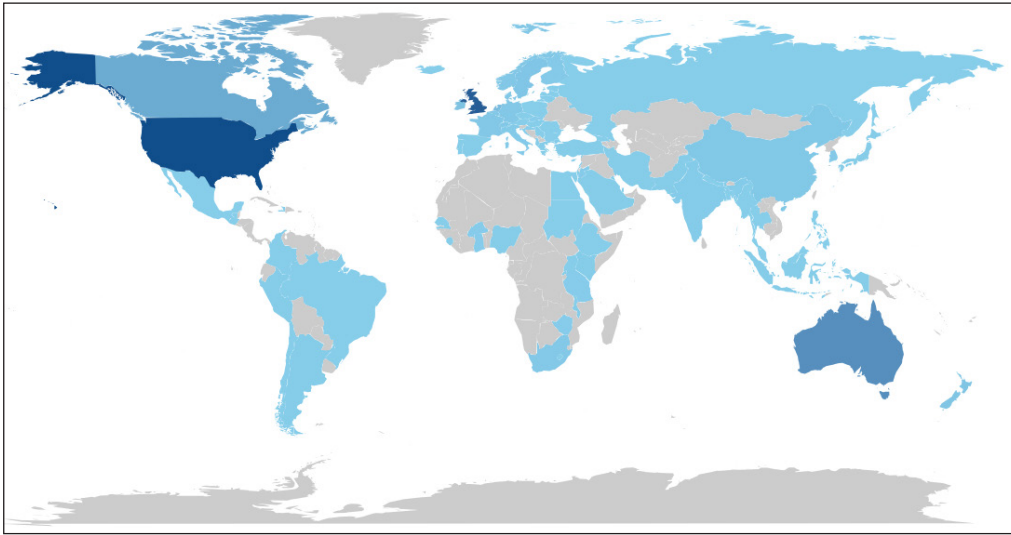
Figure 3 shows the contribution of different countries to clinical leadership research. The map shows that the United States (n=1561) has produced the highest number of studies. The United Kingdom (n: 1350) and Australia (n: 720) follow the United States in terms of the number of publications. Turkey (n=10) produces a similar number of studies to other European countries and ranks 34th globally.

Figure 4 shows the distribution of corresponding authors by country. Figure 4 confirms that most studies are conducted in the United Kingdom, United States, Australia, and Canada. Turkey, however, is not among the top 20 countries. Only 8% of U.S. studies involve international collaboration, compared to 14% in the United Kingdom. The Netherlands has the highest rate of international collaboration at 45.5%. In Turkey, five researchers have contributed as corresponding authors, but all collaborated only with researchers within Turkey.

Figure 5 illustrates the evolving research focus in clinical leadership studies over the years. Figure 5 reveals that certain topics have gained increasing scholarly attention since 2010, reflecting a growing recognition of the significance of clinical leadership in healthcare settings. In the early years, a limited number of themes were prominent, indicating a relatively narrow scope



**Figure 2:** Number of Studies Conducted via Clinical Leadership in Healthcare by Years



**Figure 3:** Countries' Scientific Production

of research. However, from 2016 onward, there was a notable expansion in research areas, accompanied by a diversification of topics, suggesting an increasing interest in various dimensions of clinical leadership. In the early period, studies focused on topics such as *randomized controlled trials*, *pain management*, and *autonomy* in clinical decision-making. These early themes reflected a focus on the fundamental aspects of medical leadership and patient-centered care. Over time, but the thematic landscape evolved and research attention shifted toward broader healthcare-related issues.

By the mid-2010s, emerging topics such as *healthcare engagement*, *physician leadership*, *clinical interventions*, *patient safety* and *burnout* became more prominent. This shift indicated an increasing awareness of the organizational and systemic factors influencing leadership effectiveness in healthcare environments. In the post-2020 period, there has been a substantial rise in

studies exploring issues related to *diversity*, *disparities* and *barriers* in health, particularly in the context of inequality and burnout among healthcare professionals. This trend underscores a growing emphasis on equity in leadership roles, the challenges faced by underrepresented groups, and the need for policies that promote inclusivity and well-being within healthcare organizations. Additionally, the heightened focus on burnout highlights the pressing concerns regarding healthcare professionals' mental health and work-related stress, reinforcing the importance of leadership strategies that foster resilience and well-being in clinical settings. Overall, the findings suggest a dynamic and evolving research landscape, with contemporary studies increasingly addressing complex, systemic challenges in clinical leadership.

Figure 6 presents the thematic map of studies in the field of clinical leadership, illustrating how topics are positioned based on their degree of development



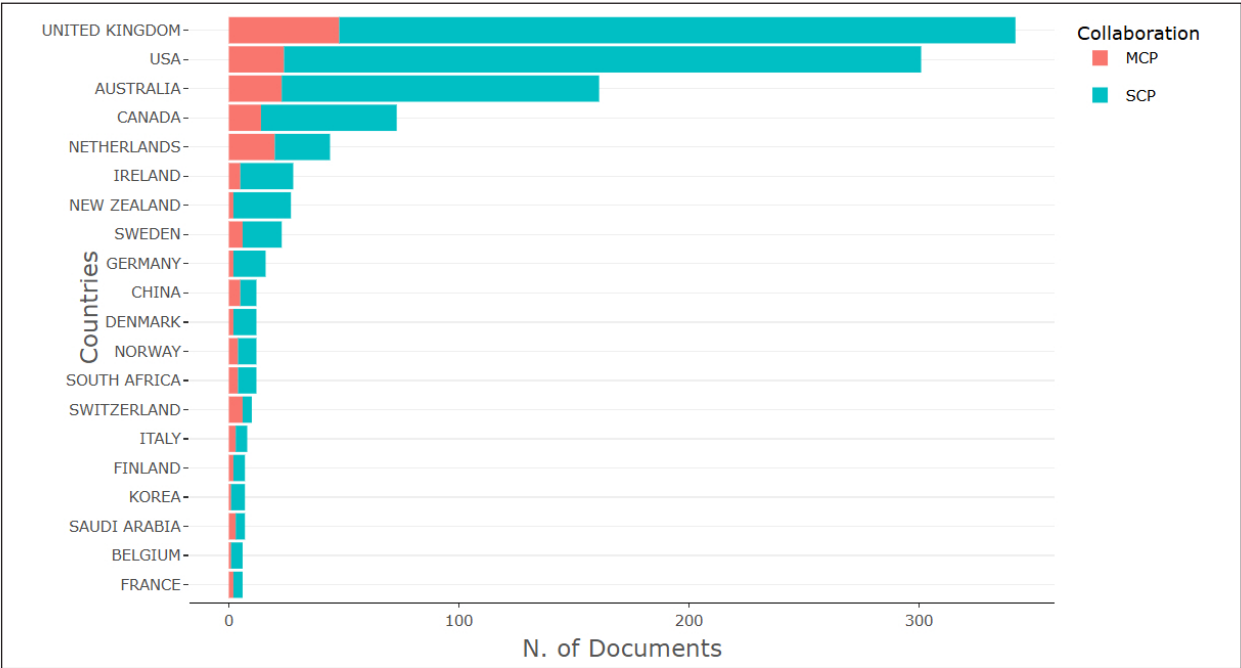


Figure 4: Corresponding Author’s Countries

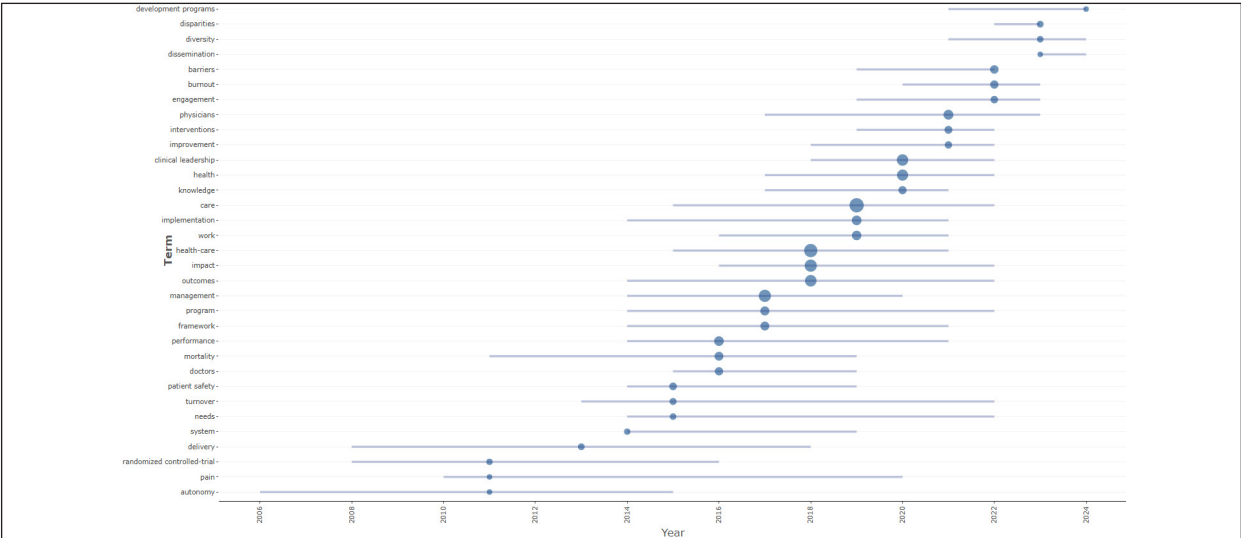
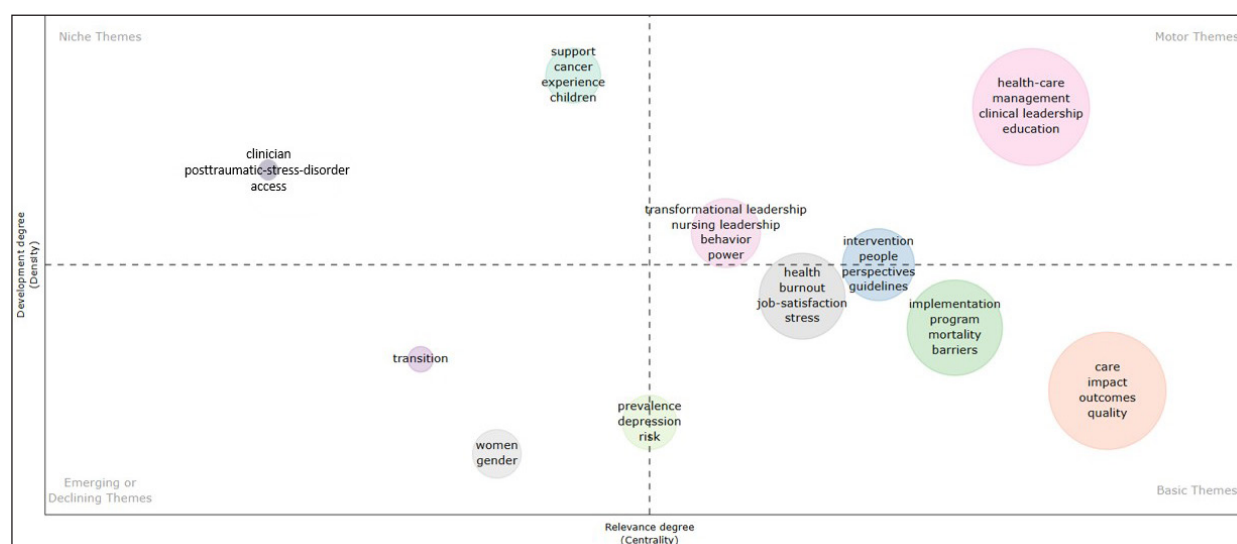


Figure 5: Trend Topics in Clinical Leadership Studies by Years Based on Keyword Plus

and centrality within the research landscape. This visualization provides insight into the evolution of research themes, highlighting their relative significance, interconnectedness, and potential trajectories in future studies. Motor themes, which represent the most significant and actively researched topics in the relevant literature, include *healthcare management* and *education*. These themes are well-developed and strongly connected to various aspects of clinical leadership, indicating their fundamental role in shaping leadership practices, policies and training frameworks within healthcare settings. Research in this area often explores leadership competencies, decision-making processes, organizational structures, and the impact of leadership on healthcare service efficiency.

Additionally, education in clinical leadership has gained prominence, focusing on leadership training programs, curriculum development, mentorship and skill acquisition for healthcare professionals to enhance leadership capabilities. In contrast, basic themes such as *care*, *impact*, *outcomes* and *quality* hold a central place in clinical leadership research but exhibit a stable developmental structure. These themes form the foundation of studies, as they address essential aspects of healthcare delivery, including patient-centered health care, the effectiveness of leadership interventions and quality improvement initiatives. Studies in this domain typically examine how leadership influences patient safety, treatment effectiveness, and overall healthcare system performance. On the other hand, niche themes,



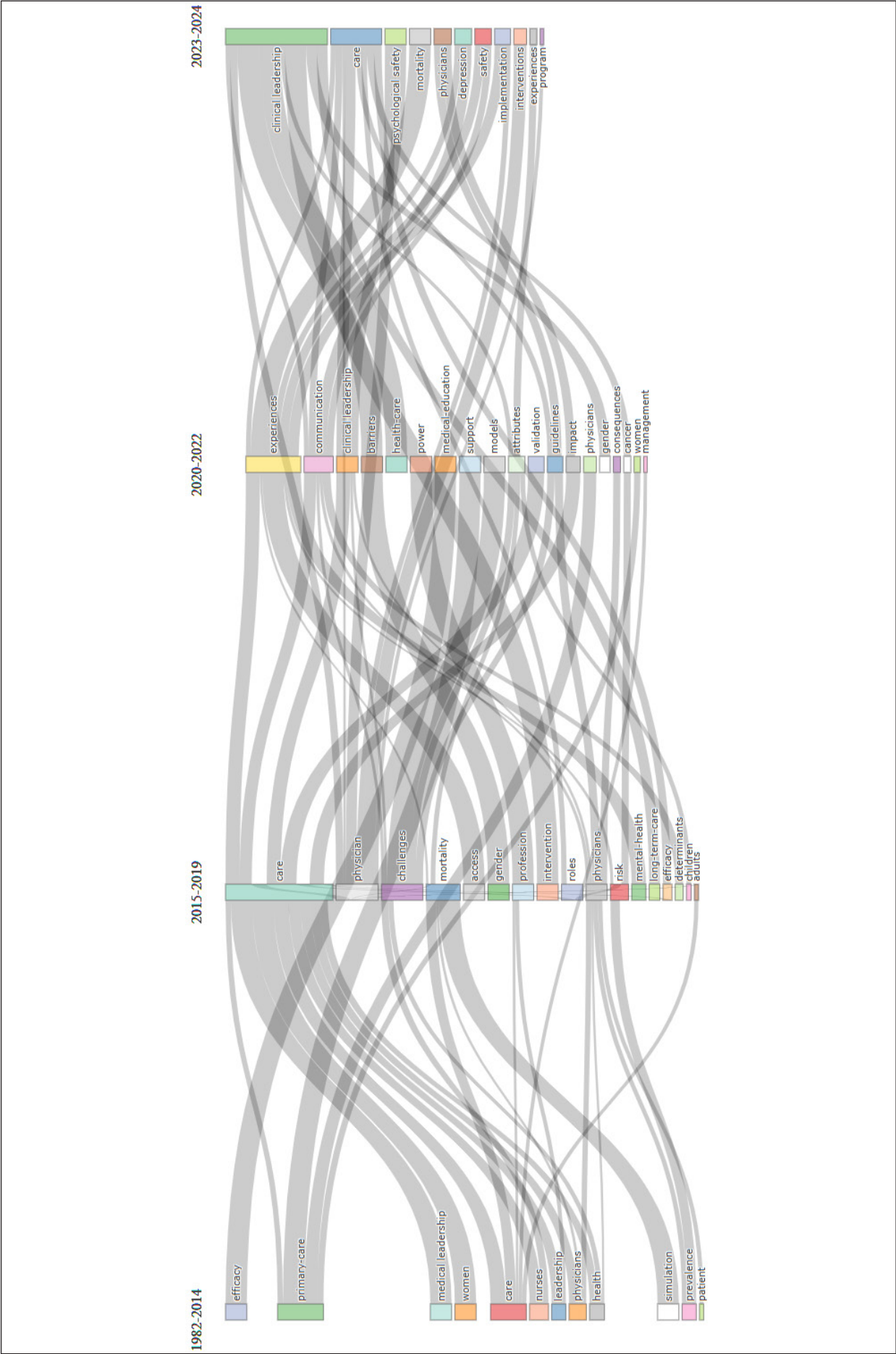
**Figure 6.** Thematic Map of Clinical Leadership Studies Based on Keyword Plus

including *support*, *cancer*, *experience* and *children*, represent studies focus on specific populations or specialized healthcare contexts. These topics are less widely explored in the broader field of clinical leadership but play a crucial role in understanding leadership dynamics in particular settings. For instance, research on support investigates the role of leadership in fostering workplace support systems, while studies on cancer explore leadership approaches in oncology care and multidisciplinary teams. Similarly, research on experience emphasizes patient and healthcare professionals' lived experiences with leadership, while studies on children delve into pediatric healthcare leadership, addressing challenges unique to child healthcare services. Emerging or declining themes, such as *transition*, *women* and *gender*, appear less frequently in the ongoing research but hold potential for future development. These themes highlight evolving discussions about leadership transitions in healthcare, gender-based disparities in leadership roles, and the representation of women in clinical leadership positions. Although these topics may not be as dominant as motor themes, their relevance may grow as healthcare organizations focus on inclusivity, gender equity, and leadership succession planning. Additionally, concepts like *transformational leadership*, *nursing* and *power* constitute critical themes are both developing and central to clinical leadership research. Transformational leadership, which emphasizes vision, motivation, and positive change, is increasingly recognized as an effective leadership model in healthcare. Nursing leadership remains a vital research area, reflecting the significant role of nurses in patient care and healthcare team coordination. Meanwhile, the theme of power examines hierarchical structures,

authority dynamics, and leadership influence in clinical settings, providing deeper insights into how leadership is exercised and perceived within healthcare organizations. Furthermore, topics like *burnout*, *job satisfaction* and *stress* highlight notable areas of research concerning the well-being of healthcare workers. These themes reflect growing concerns about occupational stress, mental health challenges, and workforce retention in the healthcare sector. Studies within this category often explore how leadership styles, workplace culture, and organizational policies impact healthcare professionals' job satisfaction, motivation, and overall well-being. Addressing these challenges through effective clinical leadership is crucial for maintaining a resilient and high-performing healthcare workforce.

The thematic evaluation results illustrating which themes have emerged over time and how they have evolved in studies on clinical leadership are presented in Figure 7. When examining Figure 7, it is observed that during the period of 1982-2014, fundamental concepts such as *care*, *nurses* and *physicians* were prominent, while topics like *women* and *health* were also considered significant. During this period, studies primarily focused on the core components of clinical leadership, the roles and responsibilities of healthcare workers and dynamics between different professional groups within the health system. Additionally, there was an emphasis on leadership practices in patient care and the influence of professional identity on leadership approaches.

In the period of 2015-2019, the research diversified, highlighting topics such as *challenges*, *access*, *gender* and *mental health*. This period saw an increase in studies on healthcare access, gender-based differences



**Figure 7.** Thematic Evaluation of Clinical Leadership Studies by Periods Based on Keyword Plus



in leadership roles, and mental health issues affecting both healthcare providers and patients as well. The discussion on leadership challenges expanded to include organizational and systemic barriers, such as inequalities in access to leadership positions and the impact of stress and burnout on leadership effectiveness. Furthermore, this period witnessed a growing interest in the intersection between clinical leadership and public health concerns, such as mental health service provision and equity in healthcare leadership.

In the period of 2020-2022, clinical leadership researches emphasized different themes like *experience*, *communication*, *barriers*, *healthcare services* and *power*. The increased focus on experience highlighted the role of professional expertise and lived experiences in shaping effective leadership. Communication became a crucial theme, emphasizing the significance of interpersonal and organizational communication in the leadership effectiveness. Studies also examined the barriers to leadership, such as institutional constraints, hierarchical structures and power dynamics within health organizations. The emergence of themes like *medical education*, *support*, *attributes* and *guidelines* indicated a growing focus on training, the development of leadership competencies and the establishment of guidelines to enhance leadership practices. The role of mentorship, peer support and leadership development programs in strengthening clinical leadership also gained attention.

In 2023-2024, themes such as *safety*, *mortality*, *depression*, *implementation*, *interventions*, *care*, *experiences*, and *programs* gained prominence, indicating increased interest in psychological safety and well-being. Research in this period shows greater awareness of the mental health challenges faced by healthcare leaders and the need for safe, supportive environments. The inclusion of themes such as implementation and interventions highlights the growing emphasis on evidence-based leadership practices and the practical application of leadership strategies to improve healthcare outcomes. Moreover, the increasing focus on mortality and patient safety underscores the critical role of clinical leadership in ensuring high-quality and safe healthcare delivery. Studies also examined leadership-driven programs and policies, showing how structured leadership interventions can improve patient care and organizational performance.

In studies conducted in Turkey, it is observed that research on clinical leadership focuses on its effects on health professionals and their perceptions. For example, in a study conducted by Budak and Özer (2018) at a

university hospital, the clinical leadership characteristics of doctors and nurses were examined, and factors such as age, gender, and education were investigated in terms of their impact on these characteristics. The study found that participants generally had high clinical leadership qualities, education level influenced personal attributes and teamwork skills and those who received management training had more advanced skills in improving and directing services. Similarly, in a different study by Kılınç, Kurt, and Ozturk (2022), the clinical leadership levels of nurse managers and the factors affecting these levels were examined. The study emphasized that nurses who received management and leadership training were more successful. Furthermore, it was determined that female nurse managers were more skilled in improving services. On the other hand, in a study conducted by Budakoğlu et al. (2021), the importance of leadership and teamwork courses in the medical school curriculum and students' feedback on these courses were analyzed. The study revealed that a significant portion of the students (62.9%) opted for these courses and were aware of the need to develop their leadership competencies. The students emphasized the importance of enhancing leadership and teamwork skills. Finally, in a study conducted by Ozyurt, Avci and Cizmeci Senel (2021), the importance of clinical leadership in quality and accreditation efforts within health services was highlighted. It was stated that clinical leaders improve collaboration, support best practices, and enhance the satisfaction of health professionals. Furthermore, clinical leadership training was emphasized as a factor that increases healthcare workers' job satisfaction, performance, and commitment to their institutions.

## DISCUSSION

This study aimed to analyze the evolution of clinical leadership research through a bibliometric analysis of peer-reviewed articles indexed in the Web of Science. Because clinical leadership plays a vital role in healthcare systems, understanding its thematic developments, research trends, and scholarly contributions is essential. Examining the progression of clinical leadership studies over time allows for the identification of key focus areas, emerging topics, and shifts in research priorities. Using bibliometric analysis, this study systematically examines how clinical leadership has been studied, mapping its intellectual structure and identifying influential works, themes, and research directions. The findings provide valuable insights into the development of clinical leadership discourse, shedding light on underexplored areas and potential future research opportunities.

Additionally, this study contributes to clinical leadership literature by offering a comprehensive review of the temporal and thematic transformations within clinical leadership research, thereby addressing gaps and guiding future academic and professional inquiries in the field.

The initial search identified 1,635 studies in the Web of Science database. 9 of them were, however, published in 2025 and 421 were not articles. Therefore, these 430 studies were excluded from this study before conducting bibliometric analysis. The analysis showed a significant increase in clinical leadership studies, especially since the 2000s, with the United States, United Kingdom, China, and Australia as the main contributors. The first of these studies was published by Joly in 1982, and it examined the importance of clinical leadership in establishing laboratory costs on a rational basis. On the other hand, it was also found that while early studies focused primarily on autonomy and professional roles (Spitzer & Neely, 1993; Berwick, 1994; Christian & Norman, 1998; Atkins & Ersser, 2000; Furlong & Smith, 2005), recent research has shifted to themes such as participation (Hampel et al, 2010; Blanchard & Kriebs, 2012; Dyson et al., 2014), quality of healthcare and well-being (Minvielle et al., 2008; Robinson et al., 2009; Cardiff et al., 2018). Nurses emerged as the most frequently studied group, highlighting their central role in clinical leadership. In addition, the analysis suggests that concepts such as burnout, mental health and health inequalities have risen to prominence in the recent years, reflecting broader concerns in healthcare systems worldwide.

These empirical findings are believed to provide valuable insights for both researchers and practitioners by shedding light on the evolving landscape of clinical leadership. Identifying emerging issues in clinical leadership research can guide future scholarly endeavors by highlighting key themes that require further exploration and deeper investigation. Understanding these evolving topics helps researchers address gaps, refine theoretical frameworks, and develop stronger methodologies for studying clinical leadership.

For healthcare decision-makers and managers, the study underscores the critical role of leadership development programs in enhancing both patient care quality and organizational efficiency. Investing in leadership training for nurses and other frontline professionals can help build a more resilient workforce and improve healthcare delivery. The study also emphasizes the need to integrate leadership development into healthcare policies and institutional frameworks. By highlighting new trends and

challenges, the study provides a foundation for future research and supports the development of more effective leadership strategies. The findings offer a roadmap for policymakers, educators, and healthcare institutions to refine leadership education and training programs, thereby fostering a more proactive and evidence-based approach to clinical leadership development.

Despite its contributions, this study has certain limitations that should be acknowledged. First, the bibliometric analysis was conducted using publications indexed exclusively in the Web of Science database, which may have led to the exclusion of relevant studies available in other academic databases, such as Scopus, PubMed, or Google Scholar. As a result, the study's findings may not fully capture the breadth of research conducted in the field. Second, while bibliometric analysis provides valuable quantitative insights into publication trends, citation networks, and thematic developments, it does not capture the qualitative depth and nuanced discussions surrounding clinical leadership. Bibliometric methods primarily focus on research output and impact rather than the interpretative aspects of leadership theories, experiences, and contextual variations.

Future research could address these limitations by including multiple databases, conducting systematic reviews, or integrating qualitative methods such as content analysis, interviews, or case studies. Additionally, examining the impact of clinical leadership within diverse healthcare systems and cultural contexts would further enrich the literature, providing a more comprehensive understanding of its global significance. Investigating cross-cultural differences in leadership styles, challenges, and best practices could offer valuable insights into how clinical leadership can be adapted to various healthcare environments, ultimately contributing to the advancement of leadership effectiveness across different regions and healthcare settings. Based on these findings, healthcare organizations are encouraged to integrate structured leadership development programs into routine professional training, particularly for nurses and frontline staff. Establishing clear competency frameworks and mentorship mechanisms may support the translation of clinical leadership principles into daily practice. Additionally, incorporating leadership assessment tools into institutional quality improvement processes can help monitor progress and strengthen leadership capacity across healthcare teams.

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