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Evidence-Based And Critical Thinking-Based Strategic Leadership Model For Crisis Response In Healthcare Service Governance

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Abstract

This study aims to identify the development of the literature on strategic leadership in healthcare services, analyze the relationship between evidence-based leadership and critical thinking in crisis decision-making, and formulate a conceptual model of strategic leadership grounded in evidence and critical thinking to strengthen crisis response in healthcare governance. The study employed a systematic literature review approach combined with bibliometric analysis using VOSviewer. The article selection process followed PRISMA guidelines through the stages of identification, screening, eligibility, and inclusion. A total of 30 scientific articles published between 2017 and 2025 from Google Scholar, Scopus, ScienceDirect, and Web of Science were systematically analyzed. The findings indicate that the literature has evolved from an initial focus on crisis management, leadership competencies, and organizational preparedness toward a stronger emphasis on evidence, decision making, clinical governance, and public health leadership. The network visualization revealed four main clusters: crisis leadership competencies, evidence-based decision-making, clinical governance implementation, and public health leadership in emergency settings. The thematic synthesis confirms that effective crisis response requires the integration of leadership competencies, the use of scientific evidence, critical thinking skills, the utilization of data and technology, and cross-sector collaboration. This study proposes a conceptual model that positions evidence and critical thinking as the core of strategic decision-making, which is then translated into clinical governance, resource management, and health system preparedness. This model offers both theoretical and practical contributions to strengthening strategic leadership in healthcare organizations, making them more adaptive, accountable, and resilient in responding to crises.

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Keywords: strategic leadership; evidence-based leadership; critical thinking; crisis response; healthcare governance.

INTRODUCTION

Outbreaks of infectious diseases, hospital capacity crises, and pressure on healthcare workforce resources require leaders of healthcare organizations to make decisions quickly and accurately. Such decisions are not only determined by administrative experience, but also by the ability to read scientific evidence and interpret information critically. Andrieiev et al. (2024) explain that the use of scientific evidence in managerial processes can improve the quality of strategic decisions in health systems. Brownson et al. (2025) emphasize that evidence-based decision making is an important approach in health policy because it integrates scientific findings, practical experience, and organizational values. In times of crisis, the integration of strategic leadership and the use of scientific evidence becomes a determining element in the success of healthcare organizations' responses.

Strategic leadership in healthcare organizations requires the ability to direct organizational vision, manage resources, and anticipate changes in the service environment. Suharto (2023) positions strategic leadership as a leader's ability to manage uncertainty and formulate long-term decisions that affect organizational sustainability. Afrihyia et al. (2025) show that healthcare organizations require leaders who are able to integrate clinical, administrative, and public policy perspectives. The study by Tate et al. (2023) also demonstrates that strong leadership is correlated with improvements in service quality and patient safety. Nevertheless, most of these studies place strategic leadership as a managerial capability without explicitly linking it to a scientific evidence-based approach or to a systematic critical thinking process.

The use of an evidence-based leadership approach has gained increasing attention in the field of health management. Neumann et al. (2021) introduced the concept of evidence-based management, which emphasizes the importance of using empirical data in organizational decision-making processes. Elhabti and Assal (2025) further developed this idea by showing that evidence-based managerial decisions can reduce subjective bias in leadership. In the health sector, Onyeador et al. (2021) explain that leaders who utilize scientific evidence can design more effective health policies and improve organizational accountability. Nevertheless, these studies mostly discuss aspects of public health policy and have not deeply examined how an evidence-based strategic leadership model can be systematically applied in health service crisis situations.

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In addition to the use of scientific evidence, critical thinking skills also serve as an important foundation in health leadership. Adhikari (2023) emphasizes that critical thinking enables leaders to assess information rationally, identify hidden assumptions, and formulate logical decisions. Jamil et al. (2024) explain that critical thinking skills include analysis, evaluation, inference, and deep reflection on available information. In health organizations, these abilities help leaders understand clinical and administrative dynamics more accurately. Ho et al. (2023) show that critical thinking frameworks such as Socratic questioning, root cause analysis, and scenario planning can improve the quality of decision-making in health policy. However, their study focuses on critical thinking frameworks in public health policy and has not conceptually integrated them with strategic leadership models in health service organizations.

Several studies on crisis leadership in the health sector also highlight the importance of analytical capacity and data interpretation skills among organizational leaders. Haupt (2021) emphasizes that crisis leaders need to interpret information quickly in order to determine appropriate response strategies. Aouad et al. (2024) explain that adaptive leadership helps organizations respond to sudden changes in health service systems. Forsgren et al. (2022) affirm that resilient health systems require leaders who are able to connect epidemiological data, hospital management, and public policy. However, these studies place greater emphasis on organizational adaptive capacity and have not formulated a leadership model that explicitly combines the use of scientific evidence with critical thinking frameworks in health service governance.

The conceptual limitation indicates a research gap that needs to be examined more deeply. Studies on strategic leadership in healthcare services tend to focus on organizational management and service quality. Research on evidence-based decision making has developed more extensively in the field of public health policy. Meanwhile, studies on critical thinking are widely discussed in health education and the professional development of medical personnel. The relationship among these three concepts—strategic leadership, the use of scientific evidence, and critical thinking—has not been widely analyzed in an integrated manner within the literature on healthcare leadership. This limitation creates the need to formulate a strategic leadership model that integrates the use of scientific evidence and a critical thinking framework as the basis for crisis response in healthcare governance.

The development of this conceptual model requires a systematic mapping of the literature in order to identify the direction of research development and the pattern of relationships among concepts. The systematic literature review (SLR) approach enables researchers to examine the

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development of knowledge systematically and transparently. Azarian et al. (2023) explain that SLR helps identify research gaps and formulate a clearer research agenda. Bibliometric analysis using VOSviewer can also map the relationships among research topics through keyword network visualization, and Pessin et al. (2022) show that the bibliometric approach is able to describe the structure of knowledge in a research field in a more measurable way. Through VOSviewer analysis, the relationship patterns among strategic leadership, evidence-based decision making, and critical thinking in healthcare services can be mapped more systematically.

Based on the explanation above, this study aims to identify the development of literature on strategic leadership in healthcare services, analyze the relationship between evidence-based leadership and critical thinking in crisis decision making, and formulate a conceptual model of evidence-based and critical-thinking-oriented strategic leadership to strengthen crisis response in healthcare governance. This study is conducted using a systematic literature review approach combined with bibliometric analysis using VOSviewer. The findings are expected to provide a clearer conceptual framework regarding the role of scientific evidence-based strategic leadership and critical thinking skills in improving the quality of crisis response in healthcare organizations.

RESEARCH METHODOLOGY

This study uses a systematic literature review (SLR) approach combined with bibliometric analysis to map the development of research related to evidence-based and critical thinking-based strategic leadership models in responding to healthcare service crises. This method enables researchers to synthesize literature systematically while identifying patterns of relationships among research topics through bibliometric mapping. The SLR approach was selected because it can integrate research findings scattered across various scientific publications in a structured manner, thereby producing a clearer conceptual understanding of the direction of research development in a particular field of study. Bibliometric analysis is used to visualize the relationships among keywords, authors, and research topics, allowing patterns of relationships in scientific literature to be presented in a more measurable way.

The research protocol follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, which consist of four main stages: identification, screening, eligibility, and inclusion (Page et al., 2021). In the initial stage, the researcher determined the research objective, namely to analyze the development of literature on evidence-based and critical thinking-based strategic leadership in response to healthcare governance crises. The researcher then formulated research questions to guide the literature search process and

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determine the search strategy for relevant scientific articles. The integration of SLR and bibliometric analysis was carried out because both approaches share a similar research flow, beginning with the determination of research objectives, literature search strategies, article selection processes, and continuing through the analysis and synthesis of research findings.

All stages of this research were conducted systematically using 30 scientific articles published between 2017 and 2025. This time span was selected because it was considered capable of reflecting the most recent developments in research on strategic leadership, evidence-based leadership, and critical thinking in healthcare systems. The data collection process was carried out through several stages, namely: (1) accessing scientific databases, including Google Scholar, Scopus, ScienceDirect, and Web of Science; (2) entering keywords in the title, abstract, and keyword fields; (3) limiting document types to research articles and review articles; (4) setting the publication year range from 2017 to 2025; and (5) conducting the literature search process. The keywords used included: “Strategic Leadership,” “Evidence-Based Leadership,” “Critical Thinking,” “Health Governance,” “Health Crisis Management,” “Evidence-Based Decision Making,” and “Health System Leadership.” All retrieved articles were then downloaded in CSV or RIS format and stored in Mendeley software for reference management. The dataset was subsequently analyzed using VOSviewer to produce bibliometric visualizations, including network visualization, overlay visualization, and density visualization, which illustrate the relationships among research concepts.

At the screening stage, all identified articles were evaluated to determine their suitability with the research focus. The selection process was conducted by reading the titles, abstracts, and keywords to ensure the relevance of the articles to the topic of evidence-based and critical thinking-based strategic leadership in healthcare services. Articles that were not relevant to the research focus were then eliminated using the predetermined exclusion criteria. The selection criteria are presented in Table 1 below.

Table 1. Selection Criteria

No.	Exclusion Criteria	Exclusion Results
1	Articles not written in English	22 articles
2	Articles that did not include the concepts of strategic leadership, evidence-based leadership, or critical thinking in healthcare services	31 articles
3	Duplicate articles from different databases	6 articles

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The screening process using these exclusion criteria resulted in 45 articles that met the initial requirements for the next stage. These articles were then further evaluated at the eligibility stage through full-text reading to ensure the suitability of the research methodology and the conceptual contribution provided to the research topic. The quality assessment of the articles was conducted using the following evaluation questions:

a. Was the article published in a scientific journal indexed by Scopus, Web of Science, ScienceDirect, or Google Scholar during the 2017–2025 period?
b. Does the article discuss strategic leadership, evidence-based leadership, or critical thinking in the context of healthcare organizations or health policy?
c. Does the article explain the implications of leadership for crisis response, healthcare service governance, or strategic decision-making in the health system?

If the answer to these questions was “yes,” the article was considered to have met the quality standards and was included in the final inclusion stage. The selection process resulted in 30 scientific articles, which were then systematically analyzed using a systematic literature review approach and visualized using VOSviewer to map the conceptual relationships among strategic leadership, evidence-based decision-making, and critical thinking in healthcare governance. The mapping results were subsequently used to develop a thematic synthesis and formulate a conceptual model of evidence-based and critical thinking-oriented strategic leadership in healthcare crisis response.

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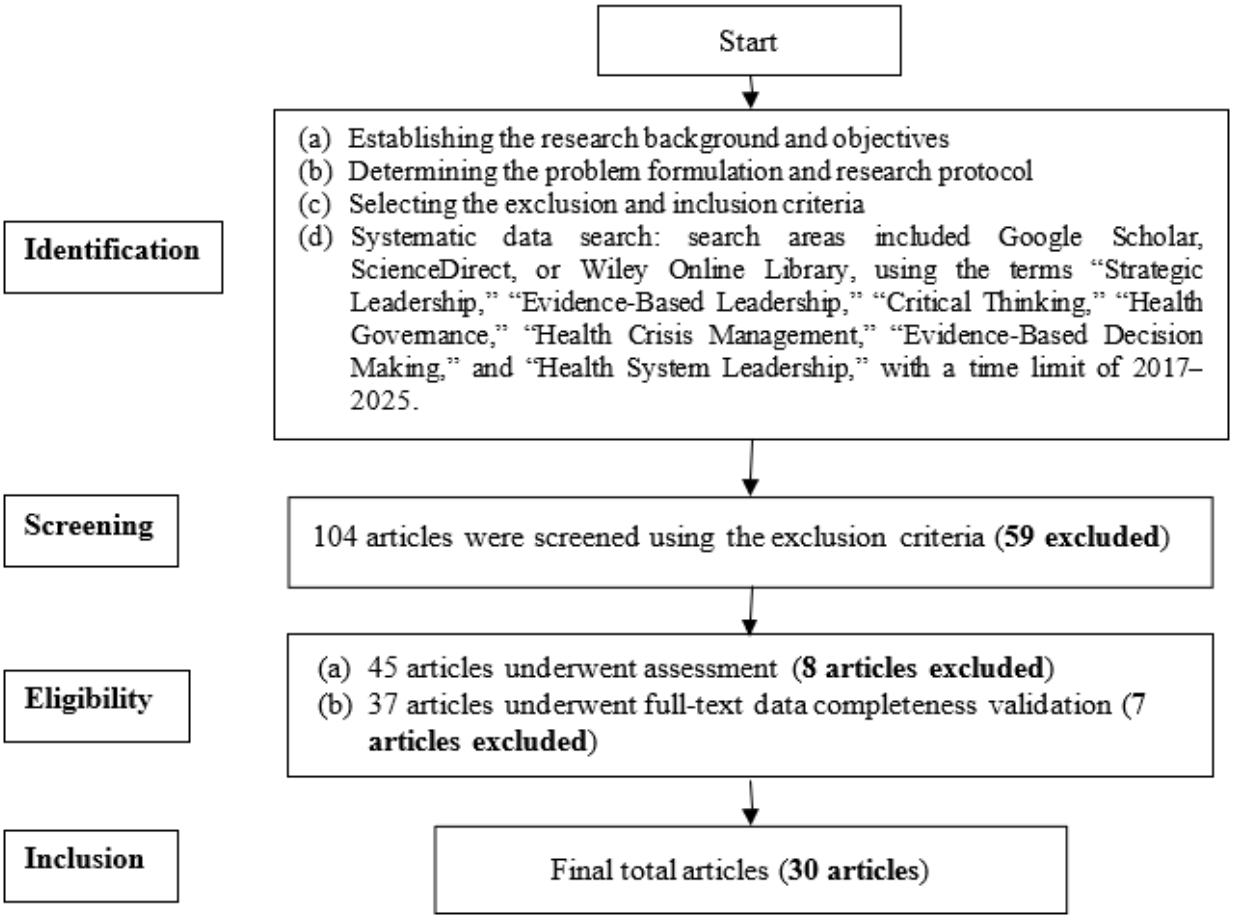


Figure 1. PRISMA Flow Diagram

The flow diagram in Figure 1 illustrates the stages of the systematic literature review, beginning with identification through the establishment of objectives, problem formulation, protocol development, and the determination of inclusion and exclusion criteria. A systematic search was then conducted through Google Scholar, ScienceDirect, and Wiley Online Library using keywords related to the neutrophil-to-lymphocyte ratio and liver cirrhosis for the 2017–2025 period, resulting in 100 articles. At the screening stage, 59 articles were excluded, and 45 articles passed the initial selection based on titles and abstracts. Subsequently, at the eligibility stage, methodological assessment and full-text completeness evaluation were carried out, resulting in the elimination of 15 articles and the validation of 30 articles with no additional exclusions. Finally, at the inclusion stage, a total of 30 articles that met all criteria were selected for systematic

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analysis, visualized using VOSviewer, and manually reviewed for the synthesis of research findings.

RESULTS AND DISCUSSION

The Network Visualization in VOSviewer presents the structure of conceptual proximity within the literature on an evidence-based and critical-thinking-based strategic leadership model for crisis response in healthcare governance. The size of each node indicates the intensity of term occurrence, while the lines and distances between nodes represent the strength of conceptual relationships. In this visualization, keywords such as leadership, evidence, management, crisis management, and decision making occupy central positions. This pattern confirms that crisis response in healthcare services is no longer understood merely as an administrative action, but as a strategic process grounded in leaders' competencies, the use of evidence, critical thinking skills, clinical governance, and public health preparedness. This finding is consistent with the view that crisis leadership in the health sector must be adaptive, rapid, knowledge-based, and capable of translating evidence into both operational and policy decisions.

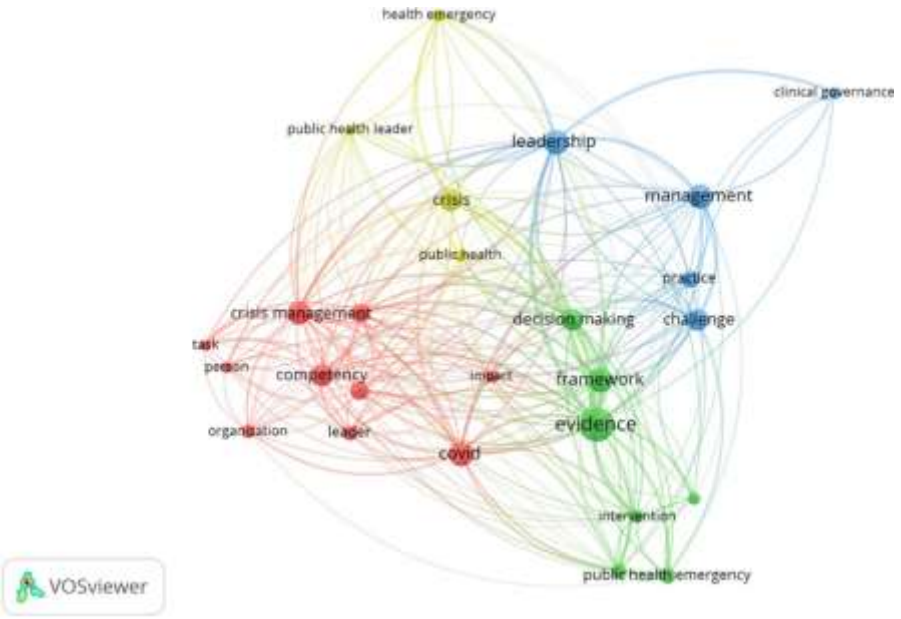


Figure 2. Network Visualization Results of the Study

The mapping results in the Network Visualization show that Cluster 1 (red) connects competency, covid, crisis management, effectiveness, impact, leader, organization, pandemic,

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person, and task. This cluster represents the operational foundation of crisis leadership, namely the capacity of leaders to manage tasks, people, and organizations during a pandemic or health-related disruption. The position of crisis management, which is closely connected to competency, leader, and organization, indicates that the effectiveness of crisis response is strongly determined by the quality of leadership competencies, particularly task-oriented, people-oriented, and adaptive-oriented competencies. This pattern is consistent with findings that pandemic leadership requires planning, crisis communication, collaboration, and the ability to interpret rapidly changing socio-political contexts (Sriharan et al., 2022).

The relationship between competency and effectiveness also strengthens the argument that crisis leadership models need to be developed based on a clear competency framework, rather than relying solely on individual experience (Kapucu & Ustun, 2018; Wicker, 2021; Morse & Warshawsky, 2021). In the context of COVID-19, the literature shows that weak structures, rigid organizational cultures, limited resources, and low levels of organizational learning can hinder the resilience of healthcare facilities. Therefore, the role of leaders becomes crucial in integrating organizational functions so that they remain responsive (Ezzati et al., 2023; Donelli et al., 2022).

The connection between the person and task nodes indicates that strategic leadership in health crises must balance result orientation with psychological and social support for healthcare workers, victims, and affected communities, as emphasized in the psychosocial crisis management model and the social competency framework in disaster management (Dückers et al., 2017; Sim et al., 2022). Thus, Cluster 1 confirms that a strategic leadership model must be built upon leaders' core competencies in directing organizations, managing human resources, maintaining the effectiveness of actions, and responding to crisis impacts in a structured manner.

The mapping results in the Network Visualization show that Cluster 2 (green) connects decision making, evidence, framework, intervention, knowledge, need, and public health emergency. This cluster serves as the epistemic core of the study because it demonstrates that strategic leadership in healthcare service governance revolves around the use of evidence, knowledge, analytical frameworks, and interventions that are relevant to needs during public health emergencies. The evidence node appears highly central and intersects with decision making and framework, indicating that crisis decisions cannot be separated from the process of knowledge synthesis and critical reasoning.

This finding is highly consistent with the study by Hussein et al. (2025), which positions Socratic Questioning, the Paul-Elder Framework, Scenario Planning, Root Cause Analysis, and the Delphi Method as critical thinking tools that strengthen decision making and public health policy

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development. Khalil et al. (2024) and Lancaster et al. (2020) also emphasize that in health crises, evidence must be understood adaptively: not only as evidence that is methodologically ideal, but also as evidence that is sufficiently strong, timely, relevant, and translatable into immediate decisions.

The connection between knowledge and intervention shows that knowledge production does not stop at analysis, but must drive targeted action. This is in line with the use of digital data and eHealth platforms for triage, monitoring, and real-time service allocation during COVID-19 (Krausz et al., 2020), the use of global public health databases for population management during pandemics (Burkle et al., 2021), and the application of analytical models to optimize healthcare supply chains during outbreaks (Ojika et al., 2024).

From a managerial perspective, the use of evidence-based leadership and evidence-based management strengthens the quality of decisions made by hospital leaders and healthcare organizations because decisions are built upon organizational data, scientific literature, stakeholder perspectives, and implementation knowledge (Välimäki et al., 2024; Daouk-Öyry et al., 2021; Sallam et al., 2025). In the context of acute nursing practice, leaders also need to transform knowledge into a work culture through learning networks, mentoring, and digital support so that evidence-based practice does not remain merely a policy document (Ominyi et al., 2025). Therefore, Cluster 2 confirms that an evidence-based and critical-thinking-based strategic leadership model must place knowledge, thinking frameworks, and field needs as the foundation for designing crisis interventions.

The mapping results in the Network Visualization show that Cluster 3, marked in blue, connects challenge, clinical governance, leadership, management, and practice. This cluster represents the implementation domain, namely the space in which strategic leadership is translated into clinical governance, service management, and field practice. The leadership node is positioned close to management and practice, indicating that leadership in a health crisis does not stand alone as a normative function, but operates through mechanisms of service management, quality supervision, patient safety, audit, and risk control.

This relationship is particularly strong in discussions of clinical governance in emergency settings, where nursing leaders must make rapid decisions, coordinate teams, maintain service quality, and uphold the principles of clinical accountability (Dias et al., 2025). At the system level, an effective health administration framework also requires directed decentralization, stakeholder coordination, transparency, accountability, and adaptive capacity so that governance can respond to crises without compromising the quality of routine services (Vitrianingsih & Gautama, 2022).

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The challenge node in this cluster is important because it indicates that the implementation of evidence-based leadership always faces structural, political, cultural, technological, and coordination barriers. These challenges appear in the form of gaps between guidelines and practice, limited ready-to-use evidence, weak interagency integration, and high pressure on service systems during a pandemic (Nicola et al., 2020; Ezzati et al., 2023). The literature also shows that the quality of crisis management improves when organizations are able to build cross-sectoral and cross-unit collaboration, because public health responses cannot be handled by a single profession or institution alone (Wang et al., 2022; Khuwaja et al., 2024). Thus, Cluster 3 emphasizes that a strategic leadership model must bridge evidence and critical thinking into concrete clinical governance practices that are safe, accountable, responsive, and resilient under crisis pressure.

The mapping results in the Network Visualization show that Cluster 4 (yellow) connects crisis, health emergency, public health, and public health leader. This cluster reflects the macro and policy dimensions of strategic leadership, namely the position of public health leaders in identifying threats, preparing systems, and directing cross-sectoral responses during emergencies. The proximity between public health leader and health emergency indicates that public health leaders serve as a bridge between policy, intersectoral coordination, risk communication, and resource management. This finding is consistent with Khuwaja et al. (2024), who emphasize the importance of risk identification, stakeholder communication, and resource management in health crisis leadership. Burkle Jr. (2019) further positions the need for a health crisis management framework as a response to global health crises that exceed the capacity of conventional disaster models. Within this framework, leaders do not merely react during the response phase but also lead prevention, preparedness, recovery, and rehabilitation.

This perspective is reinforced by Soyege et al. (2024), who highlight the importance of integrated surveillance, real-time data analytics, scenario-based exercises, supply chain strengthening, and public communication in enhancing preparedness. The study by Godwins et al. (2024) adds that health emergencies also require sensitivity to social vulnerability, including nutritional aspects, because the impacts of crises are not evenly distributed across all groups. On the other hand, Aridi (2025) shows that the capacity of public health leaders needs to be continuously developed through AI-supported executive coaching to improve adaptability, emotional intelligence, and ethical decision-making. Even in the context of behavioral health crises, evidence-based and person-centered response design remains essential so that the institutions developed are truly effective and equitable (El-Sabawi & Carroll, 2021). Therefore,

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Cluster 4 confirms that strategic leadership in public health must move beyond mere command toward system orchestration, risk interpretation, and the formulation of both short-term and long-term strategies.

The Overlay Visualization in VOSviewer is used to examine the temporal development of a research theme based on the average year of keyword occurrence. Dark blue indicates topics that emerged earlier, green represents a transitional phase, while yellow indicates more recent themes. In the context of an evidence- and critical thinking-based strategic leadership model for crisis response in healthcare service governance, this map helps explain the shift in research focus: from basic issues of crisis management and leadership competence toward a more recent emphasis on evidence, decision-making, clinical governance, and public health leadership in emergency situations.

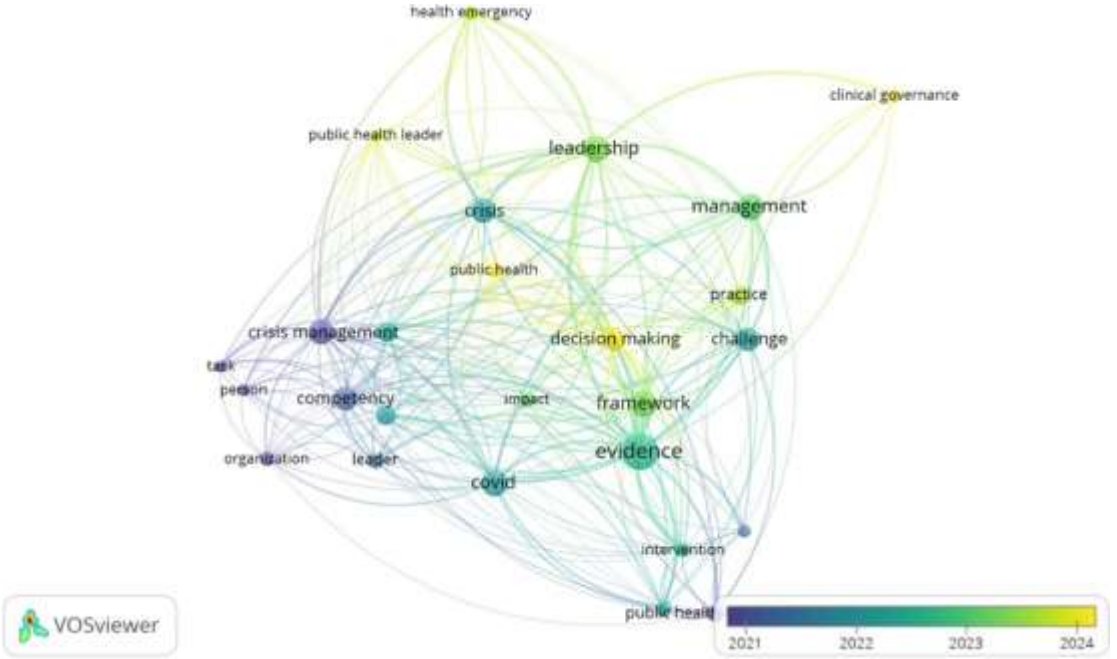


Figure 3. Overlay Visualization Results of the Study

Based on the overlay map, themes that tend to appear earlier are shown in the blue to bluish-green areas, particularly in the keywords crisis management, task, person, organization, competency, leader, public health, covid, and intervention. This pattern indicates that the early phase of research development focused largely on the basic aspects of crisis response, namely how health organizations deal with major disruptions through strengthening tasks, individual roles, organizational structures, and leadership competencies. This direction shows that early

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studies initially positioned crises as managerial and operational issues. The main focus was on the effectiveness of actions, institutional preparedness, internal coordination, and leaders' ability to mobilize organizations when pressure increased.

The green color dominating the central part of the map appears in the keywords leadership, management, framework, evidence, challenge, practice, and decision making. This position indicates the next phase of development, in which research attention no longer stopped at administrative crisis management but shifted toward efforts to build a more systematic leadership framework. At this stage, leadership began to be understood as a strategic practice that requires an evidence base, the ability to assess challenges, and the capacity to translate knowledge into service decisions and practices. The relatively central position of evidence and decision making shows that the discourse on evidence-based leadership has begun to become a new core in health service governance. In other words, crisis response is not only required to be rapid, but must also be scientifically, operationally, and ethically accountable.

Meanwhile, more recent keywords are shown in yellowish-green to yellow colors, particularly health emergency, public health leader, clinical governance, public health, and partly leadership. This color direction indicates the strengthening of newer themes that place strategic leadership at the system level. Recent studies do not only discuss leaders as organizational controllers, but also as actors who bridge evidence, clinical governance, cross-sectoral coordination, and public health response. The emergence of clinical governance as a relatively new theme shows an important shift toward service quality, patient safety, accountability, audit, and the integration of clinical and managerial decisions in emergency situations. At the same time, the keywords public health leader and health emergency indicate that health crises are now understood as system-level leadership issues that require strategic vision, rapid adaptation, and the ability to assess risks broadly.

Table 2. Frequency of Articles Based on Year of Publication

Year	Frequency	Percentage (%)
2017	2	6.67
2018	2	6.67
2019	1	3.33
2020	3	10.00
2021	5	16.67
2022	5	16.67

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2023	1	3.33
2024	6	20.00
2025	5	16.67
Total	30	100

The interpretation of the publication frequency table shows a development of research that aligns with the color pattern in the Overlay Visualization. In the early period of 2017–2019, the number of articles was still limited, with 5 articles or 16.67%. This reflects a conceptual stage focusing on the foundations of crisis management, leadership competence, and organizational preparedness, corresponding to the dominance of blue in several early keywords. An increase began to appear in 2020–2022, with 13 articles or 43.34%. This growth was driven by the COVID-19 pandemic, which increased attention to leadership, management, decision-making, and the use of evidence in health systems. This is in line with the emergence of green in terms such as leadership, management, framework, and decision making.

Although 2023 recorded only 1 article or 3.33%, this phase reflects a transition toward more specific themes, as indicated by the emergence of yellow in keywords such as clinical governance, health emergency, and public health leader. The peak of publication occurred in 2024, with 6 articles or 20.00%, and remained high in 2025, with 5 articles or 16.67%. This indicates the strengthening of studies on the integration of evidence-based strategic leadership, clinical governance, and public health emergency response. Therefore, research in this field continues to develop toward a leadership model that is more adaptive, evidence-based, and oriented toward the resilience of healthcare service systems.

Table 3. Summary of 30 Included Articles

No.	Author(s) Year	Research Objective	Method	Research Findings
1	Hussein, H. S., et al. (2025)	To evaluate the application of structured critical thinking frameworks in public health and their effectiveness in improving evidence-	A systematic review following the PRISMA 2020 guidelines in PubMed, Scopus, Web of Science, and Google	Five main frameworks were identified: Socratic Questioning, Paul-Elder Framework, Scenario Planning, Root Cause Analysis, and Delphi Method. Collectively, these

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		based decision-making and policy development.	Scholar from 1990 to 2024. A total of 86 studies were included.	frameworks support improved reasoning, inclusivity, and strategic planning in public health policy and practice.
2	Khalil, H., Marcucci, J., & Liu, C. (2024)	To highlight the importance of evidence-based medicine (EBM) in public health emergencies and explore innovative solutions to address challenges in evidence synthesis.	A conceptual perspective discussing challenges arising from the COVID-19 pandemic and exploring innovative solutions.	EBM improves the responsiveness of healthcare systems and the efficient allocation of resources during crises. In crisis situations, EBM needs to expand its strict evidence hierarchy to include timely, reasonable, and intuitive expert judgment.
3	Khuwaja, I. G., et al. (2024)	To critically evaluate public health leadership during crises and identify and analyze administrative actions and leadership strategy development.	A systematic literature review based on PRISMA in PubMed, Scopus, and Google Scholar from 2010 to 2023. A total of 120 studies met the inclusion criteria, and 13 articles were analyzed qualitatively.	Effective leadership improves disaster response through communication, collaboration, and decision-making. Key strategies include proactive risk identification, stakeholder communication, and resource management. Challenges include rigid organizational structures and a lack of consistency in crisis management plans.
4	Aridi, A. S. (2025)	To present an analytical overview of how leadership theory and the	A rapid literature review in PubMed, Scopus, Web of Science,	AI has the potential to transform leadership coaching into a dynamic, evidence-based process

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		transformative potential of artificial intelligence (AI) can improve leadership coaching interventions in public health contexts.	ResearchGate, and Google Scholar from 2015 to 2025.	capable of rapidly developing leadership competencies. The newly introduced Healthcare Leadership Coaching Contribution Model includes 28 coaching focus areas tailored to public health emergency response.
5	Vitrianingsih, Y., & Gautama, E. C. (2022)	To explore the role of public health administration in managing health systems and responding to health crises.	A literature-based study analyzing administrative frameworks and evaluating strategic practices.	The findings highlight the importance of decentralized governance, stakeholder coordination, and evidence-based policy formulation. Effective administration is characterized by transparency, accountability, and adaptive capacity. Proactive planning and leadership development are fundamental components.
6	Sriharan, A., et al. (2022)	To characterize the types of leadership competencies commonly demonstrated in pandemic contexts based on evidence regarding leaders' behaviors and skills.	A review of empirical articles in medical and business databases from 2003 to December 2020. A total of 35 articles were included for detailed analysis.	Task-oriented competencies, such as preparedness, planning, collaboration building, and crisis communication, received the most attention. However, people-oriented and adaptive competencies are also fundamental in

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				addressing the unique context of pandemics.
7	Dias, D., et al. (2025)	To analyze the relationship between nurse leadership and clinical governance in emergency settings and identify strategies that improve care quality.	A theoretical-reflective analysis supported by a review of recent scientific literature using Rodgers' concept analysis approach.	There is interdependence between leadership and clinical governance based on patient safety, quality, and accountability. Nurse leadership serves as a structural pillar of clinical governance, strengthens team resilience, and improves clinical outcomes.
8	Kapucu, N., & Ustun, Y. (2018)	To identify how leadership competencies influence perceived crisis management effectiveness.	A self-reported survey of executive public leaders in Turkey. The number of subjects was not explicitly stated in the abstract.	Core leadership competencies have a positive relationship with crisis management effectiveness. Task-oriented leadership behavior was found to have the greatest impact on crisis management effectiveness.
9	Burkle Jr, F. M. (2019)	To propose the development of a Health Crisis Management Framework to oversee the strategic and operational requirements of global public health crises.	A conceptual analysis discussing the challenges of modern public health crises and applying the concept of the 1930s "disaster cycle."	The disaster cycle phases, namely prevention, preparedness, response, recovery, and rehabilitation, provide opportunities to develop a structured Health Crisis Management Framework for global public health crisis challenges.
10	Välimäki, M., et al. (2024)	To examine how evidence is used to	A mixed-methods systematic review	Leadership problems were related to the

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		solve leadership problems and describe the measurable and perceived effects of evidence-based leadership on nurse leaders.	in seven databases up to November 11, 2021, following the JBI approach. A total of 31 publications were included: 27 case series studies, 3 mixed-methods studies, and 1 quasi-experimental study.	implementation of knowledge into practice, quality of care, and resource availability. The perceived and measurable effects of evidence-based leadership focused on nurse performance, organizational outcomes, and clinical outcomes. No economic data were available.
11	Lancaster, K., Rhodes, T., & Rosengarten, M. (2020)	To critique idealistic approaches to evidence-based policy and propose a new, more emergent and adaptive way of thinking about evidence-making during public health emergencies.	A conceptual discussion comparing evidence-based policy approaches with rapid assessment and outbreak science approaches.	The COVID-19 pandemic required critical assessment of what counts as "sufficient evidence" for rapid and repeated decision-making. Evidence-making and intervention should develop through dialogue that integrates different forms of evidence and expertise, referred to as the evidence-making intervention approach.
12	Krausz, M., et al. (2020)	To develop an innovative web-based solution to address challenges in triage, monitoring, and non-hospital	Platform development based on literature, an existing shared health record	A Crisis Management Platform was developed to streamline patient intake, triage, monitoring, referral, and non-hospital service delivery. The platform

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		service delivery during the COVID-19 pandemic.	platform, and discussions among healthcare providers, policymakers, academics, and the private sector.	decentralizes service provision while centralizing data collection and analysis, facilitating evidence-based decision-making.
13	Langan, J. C., Lavin, R., Wolgast, K. A., & Veenema, T. G. (2017)	To review current challenges and opportunities for expanding competency-based and evidence-based education and training programs for healthcare workforce disaster preparedness.	A narrative review of challenges and opportunities in disaster preparedness education for the healthcare workforce in the United States.	The United States needs a national healthcare workforce with the knowledge, skills, and abilities to respond to disasters. Nurse leaders are ideally positioned to advocate for and support various learning options to strengthen workforce preparedness.
14	Gwebu, K. L., Wang, J., & Wang, L. (2018)	To examine the relative effectiveness of corporate reputation and a set of post-data-breach response strategies in protecting firm value.	A quantitative study based on cognitive dissonance theory and cue diagnosticity theory. The data source was not explicitly stated in the abstract.	Corporate reputation is an important asset in protecting firm value. Only certain response strategies mitigate the negative financial impact of breaches on firms with low reputation, while response strategies have less influence on firms with high reputation.
15	Sallam, M., et al. (2025)	To examine key facilitators that enhance the adoption of	A narrative literature review in PubMed, ABI/INFORM,	Leadership commitment, organizational culture, access to high-quality evidence, professional

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		Evidence-Based Management (EBMgt) in healthcare, with a focus on leadership effectiveness, operational efficiency, and strategic decision-making.	Google Scholar, and other sources from 2015 to 2025. A total of 37 studies were analyzed.	development, stakeholder engagement, and digital solutions are essential in fostering an EBMgt culture. The study introduces the EBMgt Implementation Pentagon Model as a new conceptual framework.
16	Dückers, M. L., et al. (2017)	To integrate psychosocial principles with a strategic crisis management model to help public leaders understand psychosocial dynamics and barriers throughout the crisis cycle.	Development of a conceptual model, namely the Psychosocial Crisis Management Model (PCM), which integrates psychosocial support principles with the tasks of strategic crisis managers.	The resulting PCM model illustrates how the tasks of strategic crisis managers can be guided by psychosocial support principles. Integrating crisis management insights and psychosocial support principles helps reduce predictable problems during the response and recovery phases.
17	Godwins, O. P., et al. (2024)	To present a comparative analysis of disaster management strategies and their impact on nutritional outcomes in the United States and Nigeria.	A comprehensive literature review comparing disaster management frameworks, policies, and practices in the United States and Nigeria.	Differences exist in disaster management infrastructure and capacity between the two countries. The study recommends strengthening coordination mechanisms, integrating nutrition into disaster preparedness plans, and addressing socioeconomic

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				determinants of nutritional vulnerability.
18	Ezzati, F., Mosadeghrad, A. M., & Jaafaripooyan, E. (2023)	To identify challenges faced by Iranian healthcare facilities during the COVID-19 epidemic and provide solutions.	A qualitative study using a phenomenological approach with semi-structured interviews. A total of 59 participants were involved, including policymakers, managers, staff, and medical faculty members.	Forty-three challenges to healthcare facility resilience were identified across eight themes. Key challenges included fragmented management systems, poor leadership, lack of a national plan, and inadequate resources. Solutions included integrated, community-based, and evidence-based management.
19	Ominyi, J., Nwedu, A., Agom, D., & Eze, U. (2025)	To examine how nurse managers navigate challenges in sustaining the adoption of evidence-based practice (EBP) in acute care settings.	A collective case study using a longitudinal qualitative design in two acute care settings in the United Kingdom. Data were collected over eight months through interviews, observations, and document analysis. The number of participants was not stated.	Six interrelated themes emerged: adaptive leadership strategies, overcoming organizational barriers, use of knowledge and learning networks, digital transformation and EBP, patient-centered adaptation, and emotional and psychological support. Nurse managers play an important role in driving EBP implementation.

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20	Wicker, C. (2021)	To propose the adoption of a competency-based approach to prepare leaders for crisis events such as COVID-19.	Research on crisis leadership competency models from the perspective of human resource practitioners.	The model developed by Wooten and James, along with the model from the Centers for Disease Control and Prevention (CDC), was proposed as a basis for building a competency framework to inform and improve leadership development programs.
21	Soyege, O. S., et al. (2024)	To strengthen public health infrastructure against pandemics and bioterrorism threats through crisis management and emergency preparedness.	A conceptual review synthesizing lessons from past pandemics, including COVID-19.	Key findings indicate that integrated surveillance systems, real-time data analytics, and cross-sector collaboration significantly improve response effectiveness. Investment in workforce training, logistics, and public communication is essential. A multifaceted approach combining technological advances, policy reform, and community engagement is crucial.
22	Daouk-Öyry, L., Sahakian, T., & van de Vijver, F. (2021)	To identify the core and functional competencies of evidence-driven managers in hospital settings and develop an evidence-based competency model.	Qualitative data collection using semi-structured interviews and the critical incident technique. A total of 36 executive managers from 11	Thirteen competencies were identified and grouped into four dimensions: technical, cognitive, interpersonal, and intrapersonal. Important competencies for EBMgt practice in hospitals

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			hospitals in Lebanon participated.	include open-mindedness, research knowledge and skills, research ethics, resourcefulness, and relationship management.
23	Nicola, M., et al. (2020)	To classify aspects of leadership during the COVID-19 pandemic, enable closer examination of published reports and outcome analysis, and formulate evidence-based recommendations.	A literature review of leadership models and health policies during the COVID-19 pandemic.	The study analyzed various leadership models and outcomes during the pandemic, leading to the formulation of several evidence-based recommendations for de-escalating restrictions.
24	Morse, V., & Warshawsky, N. E. (2021)	To discuss current and future nurse leadership competencies after the COVID-19 pandemic.	A conceptual analysis based on insights from the American Organization for Nursing Leadership and the Association for Leadership Science in Nursing.	The pandemic has highlighted the need for new leadership competencies to shape the future of nursing, including a focus on reducing health disparities and addressing the health and well-being needs of nurses.
25	Burkle Jr, F. M., Bradt, D. A., & Ryan, B. J. (2021)	To examine global public health (GPH) information system deficits that emerged during the COVID-19 pandemic and describe a new	A two-part conceptual analysis surveying information system deficits, missed past opportunities, and	The study examined GPH information system deficits and described a new multidisciplinary model for population-based management (PBM) supported by a GPH

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		multidisciplinary model for population-based management.	changes in megatrends in information management.	Database applicable to pandemics and GPH crises.
26	El-Sabawi, T., & Carroll, J. J. (2021)	To propose a model law, the Model Behavioral Health Response Team Act, to create a new institution that replaces police in responding to behavioral health crises, homelessness, and substance use.	Development of a model law based on empirical evidence on crisis response, federal guidelines, and a case study of political activity in Greensboro, North Carolina.	The proposed model law is evidence-based, person-centered, and community-driven. The institution created by the model is designed to protect against takeover by law enforcement and institutionalize a more humane and effective crisis response.
27	Sim, T., He, M., & Dominelli, L. (2022)	To develop a core competency framework for social work in disaster management practice.	An integrative review of 183 international empirical studies and practice reflections, guided by ecological systems theory.	An initial framework consisting of 73 competencies was developed, covering 33 micro-level competencies, 18 meso-level competencies, and 22 macro-level competencies, including knowledge, values, and skills across the four phases of disaster management.
28	Wang, H., Sun, J., Shi, Y., & Shen, T. (2022)	To analyze the mechanisms behind COVID-19 prevention and control in different	A configurational analysis using fuzzy-set Qualitative Comparative	The effectiveness of public health emergency management is the result of multiple factors. Driving pathways can be classified

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		cities and explore the role of cross-departmental collaboration in ensuring the effectiveness of emergency management approaches.	Analysis (fsQCA) in 15 cities in China.	into four categories: organizational, environmental, balanced environmental, and organization-environment dual-core categories. Local governments need to strengthen information, organizational, and environmental coordination.
29	Donelli, C. C., et al. (2022)	To discuss how healthcare organizations can overcome difficulties during the crisis coping phase by integrating crisis management and resilience literature.	A case study of a large hospital in Italy, Fondazione Policlinico Gemelli, which was at the forefront of the pandemic response in Italy.	Gemelli's overall response resulted from three types of responses: behavioral response through effective leadership, cognitive response through rapid resource reallocation, and contextual strengthening through multi-agency network response. An integrated framework of crisis management and resilience can be applied to healthcare organizations.
30	Ojika, F. U., et al. (2024)	To optimize the resilience of medical supply chains against future pandemics by evaluating key mitigation strategies such as inventory buffering, multi-	A simulation study using an agent-based simulation model incorporating realistic demand surges, supplier disruptions, and	The results show that integrating multiple resilience strategies significantly improves service levels and reduces recovery time compared with traditional supply chain configurations. The

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		sourcing, and local manufacturing.	transportation delays.	findings provide actionable insights for policymakers and healthcare organizations.

Based on the summary of the 30 included articles, the literature indicates that strategic leadership in the health sector has evolved from a traditional crisis management approach toward an approach that emphasizes the use of scientific evidence, critical thinking frameworks, and knowledge integration in decision-making processes. Critical thinking frameworks such as Socratic Questioning, the Paul-Elder Framework, Scenario Planning, Root Cause Analysis, and the Delphi Method have been shown to improve the quality of policy analysis and strategic planning in public health (Hussein et al., 2025). In the context of health crises, evidence-based medicine also plays an important role in accelerating health system responses and improving the efficiency of resource allocation, although emergency conditions require flexibility in assessing various forms of evidence and expert judgment (Khalil et al., 2024; Lancaster et al., 2020). In addition, effective public health leadership requires communication skills, cross-sector collaboration, and adaptive resource management so that organizations can respond to health threats quickly and in a coordinated manner (Khuwaja et al., 2024; Vitrianingsih & Gautama, 2022).

The literature review also shows that the success of strategic leadership in health crises is strongly influenced by leaders' competencies, organizational capacity, and the integration of evidence-based practices into the clinical and operational governance of healthcare services. Leadership competencies, including planning skills, crisis communication, team coordination, and adaptability to uncertainty, are key factors in responding to pandemics and public health emergencies (Sriharan et al., 2022; Morse & Warshawsky, 2021). At the organizational level, the implementation of evidence-based management helps hospital leaders integrate organizational data, scientific research, and practitioners' experience in formulating strategic decisions that affect healthcare workers' performance and clinical outcomes (Välimäki et al., 2024; Daouk-Öyry et al., 2021; Sallam et al., 2025). Several studies also emphasize the importance of clinical governance, inter-agency coordination, and the use of digital technology in improving the effectiveness of crisis response and the resilience of health systems (Dias et al., 2025; Wang et al., 2022; Krausz et al., 2020). These findings indicate that strategic leadership plays a role not only in decision-making but also in building a transparent, adaptive, and evidence-based governance system.

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Furthermore, several studies highlight that strengthening strategic leadership must be supported by competency development, health workforce preparedness, and the integration of a systematic crisis management framework within healthcare organizations. A health crisis management framework that includes the stages of prevention, preparedness, response, and recovery serves as an important foundation for building a health system that is resilient to global threats (Burkle Jr, 2019). Strengthening human resource capacity through competency-based education is also necessary so that health workers can respond to disasters and pandemics professionally (Langan et al., 2017; Wicker, 2021). In addition, various studies emphasize the importance of strengthening health infrastructure, integrated surveillance systems, and the resilience of medical supply chains to support the effectiveness of public health crisis management (Soyege et al., 2024; Ojika et al., 2024). Therefore, the synthesis of the 30 articles shows that an evidence-based and critical-thinking-based strategic leadership model needs to be developed through the integration of leadership competencies, the use of scientific evidence, the utilization of technology and data, and collaborative cross-sector governance in order to strengthen crisis response in modern healthcare systems.

CONCLUSION

The findings show that the literature on strategic leadership in healthcare has developed clearly from an operational crisis management approach toward a more analytical, evidence-based, and governance-oriented approach. Bibliometric mapping reveals that the concepts of leadership, evidence, management, decision making, and clinical governance serve as the main nodes connecting the discourse on leadership, the use of scientific evidence, and critical thinking skills. The synthesis of 30 articles also confirms that the success of crisis response is not determined solely by the speed of action, but by leaders' ability to interpret evidence, critically assess situations, coordinate resources, and translate decisions into safe and accountable service practices.

The implication of this study lies in strengthening the strategic leadership framework in healthcare organizations. The resulting conceptual model indicates that evidence and critical thinking need to be positioned as the main foundations of crisis decision-making, then reinforced by leadership competencies, technology and data support, clinical governance, and cross-sector collaboration. In this way, healthcare organizations can build response systems that are not only reactive to emergencies but also adaptive, transparent, and resilient in the face of uncertainty. Academically, this study expands the field of healthcare leadership by integrating three domains

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that have generally tended to be studied separately: strategic leadership, evidence-based decision making, and critical thinking.

This study recommends empirical testing of the formulated conceptual model in hospitals, community health centers, and public health institutions across various crisis contexts. Future research also needs to develop operational indicators to measure the dimensions of evidence-based leadership and critical thinking in healthcare leadership practice. From a practical perspective, healthcare institutions need to strengthen competency-based leadership training, build a culture of evidence use in decision-making, and improve the integration of information systems, clinical governance, and organizational preparedness so that crisis response can be more effective and sustainable.

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