

Media discourse on physician assistant nurses in South Korea: a text network and topic modeling approach

Young Gyu Kwon¹, Daun Jeong^{2,3}, Song Hee Park⁴,
Mi Kyung Kim^{4,5}, Chan Woong Kim^{1,2}

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Corresponding author:
Chan Woong Kim
Center for Chung-Ang Medical
Education Resource Allocation
(CAMERA) and Department of
Emergency Medicine, Chung-Ang
University College of Medicine, 84
Heukseok-ro, Dongjak-gu, Seoul 06974,
Korea
E-mail: whenever@cau.ac.kr

¹Center for Chung-Ang Medical Education Resource Allocation (CAMERA), Chung-Ang University College of Medicine, Seoul, Korea

²Department of Emergency Medicine, Chung-Ang University College of Medicine, Seoul, Korea

³Division of Critical Care Medicine, Department of Emergency Medicine, Chung-Ang University Gwangmyeong Hospital, Gwangmyeong, Korea

⁴Department of Medical Education, Chung-Ang University College of Medicine, Seoul, Korea

⁵Department of Pathology, Chung-Ang University College of Medicine, Seoul, Korea

Purpose: This study quantitatively examined the portrayal of physician assistant (PA) nurses in Korean media by integrating text network analysis with latent Dirichlet allocation (LDA) topic modeling.

Methods: A total of 3,564 news articles published by nine major Korean media outlets between 2020 and 2024 were analyzed. Content analysis was conducted using term frequency-inverse document frequency calculations, network centrality analysis, and LDA topic modeling to extract key terms, map discourse structures, and identify latent topics.

Results: The analysis identified four primary topics in Korean media discourse: "healthcare workforce expansion policies" (30.4%), "hospital clinical practice and operational management" (23.5%), "institutionalization of the PA nursing role" (17.8%), and "COVID-19 response and public health crisis management" (28.3%). High-centrality keywords included "hospital," "medical," "patient," "physician," "government," and "nurse," indicating that the discourse primarily focused on clinical settings. Topic modeling revealed a major shift from pandemic-centered coverage in 2020 to a focus on healthcare workforce policy and PA nurse institutionalization in 2024, coinciding with the passage of the Nursing Act.

Conclusion: This study provides empirical evidence suggesting that the portrayal of PA nurses in Korean media discourse evolved from a peripheral regulatory issue to a central healthcare delivery solution, particularly in the contexts of workforce management, clinical practice, and crisis response. Our findings suggest that PA nurse institutionalization received broader attention when positioned as part of systemic healthcare improvements addressing concrete clinical needs. These results offer valuable insights for policymakers and administrators in framing and implementing workforce policy reforms.

Keywords: Legislation; Nursing; Physician assistants; Republic of Korea; Text mining

Introduction

Workforce shortages and aging populations have placed increasing pressure on healthcare systems worldwide, underscoring the need for innovative service delivery models and clearly defined legal frameworks for emerging healthcare roles [1,2]. In Korea, this pressure was intensified by the 2020 medical resident strike opposing the government's plan to expand medical school admissions by 4,000 students over 10 years and to establish public medical schools as part of its healthcare reform agenda. This strike severely disrupted healthcare services at major hospitals [3]. The situation further worsened in February 2024, when the government intro-

duced a new policy to admit 2,000 additional students annually starting in 2025. This renewed effort reignited tensions and prompted mass resignations among residents and interns—many of whom had not returned to their posts as of March 2025. In response, the government enacted legislation to institutionalize the role of physician assistant (PA) nurses in sustaining essential services [4–7], culminating in the passage of the Nursing Act on August 28, 2024. This act established a legal foundation for PA nurses and initiated focused policy efforts aimed at defining their scope of practice within the healthcare system [8].

The institutionalization process highlighted several key issues warranting close examination, including professional practice boundaries, the potential impact on nursing workloads, and the integration of PA nurses into existing healthcare systems. These concerns prompted extensive discussions among stakeholders, including the medical and nursing communities, government agencies, and legislative bodies [9,10]. Moreover, media coverage of these debates played a pivotal role in shaping public perception and influencing policy development, highlighting the need to systematically analyze news content to assess how these topics are framed within public discourse [11,12].

To capture the complex patterns and evolving themes within large-scale media discourse, topic modeling has emerged as a particularly effective analytical tool. It enables researchers to identify underlying thematic structures and trace their progression over time across thousands of documents [13]. Although this method has been employed to investigate the Nursing Act and workforce-related policies in Korea [14–17], systematic research specifically examining the media portrayal of PA nurses remains limited. Existing topic-modeling-based studies on nursing law have primarily concentrated on general nursing policy frameworks, overlooking the unique position of PA nurses as a distinct professional category within healthcare workforce debates [16]. Meanwhile, research employing natural language processing to explore nursing agendas in media has yielded meaningful content insights but has lacked the longitudinal perspective essential for capturing the evolving discourse on PA nurses across policy windows and healthcare crises [17].

To bridge these research gaps, the current study employs an integrated methodological approach combining text network analysis with latent Dirichlet allocation (LDA) topic modeling to quantitatively examine how Korean media framed and disseminated information about the PA nurse system between 2020 and 2024. This dual-method approach offers distinct advantages over prior single-method studies by capturing both the network relationships among key concepts and the latent thematic structures un-

derlying media discourse. Based on this framework, our analysis proceeded in two complementary phases. First, a network centrality analysis was conducted to identify prominent keywords in news articles and map the conceptual structure of the discourse. Second, topic modeling was applied to extract latent themes, trace their temporal evolution, and evaluate how key aspects of the PA nurse system were represented across different contexts. Together, these analytical techniques yielded empirical insights into media portrayals of healthcare workforce policies and contributed to an evidence-based understanding of how emerging professional roles are framed during periods of healthcare system transformation.

Methods

1. Study design

This study used content analysis, which integrated text network analysis with LDA topic modeling, to examine news articles on PA nurses published by major Korean media outlets. Through a quantitative analysis of large-scale news content, we aimed to systematically identify key discourse patterns and prominent keywords related to PA nurses.

2. Data collection

News articles published by nine leading Korean media outlets between January 1, 2020, and December 31, 2024, were collected for analysis. These outlets were selected to capture diverse ownership structures and editorial perspectives within Korean media. The dataset included six major newspapers (Kyunghyang Shinmun, Dong-A Ilbo, Chosun Ilbo, JoongAng Ilbo, Hankyoreh, and Hankook Ilbo) along with three public and private broadcasters (KBS, MBC, and SBS). While our analysis centered on thematic content patterns across the entire dataset rather than comparative framing between outlets, incorporating a broad range of media sources enhanced the representativeness of our findings.

To identify relevant news articles, we conducted systematic keyword searches using the terms “physician assistant nurse,” “PA nurse,” and “physician assistant.” The retrieved articles were then screened for relevance based on the study’s objectives using the following exclusion criteria: (1) articles consisting only of a title and images without textual content, (2) duplicate reports by the same journalist within the same media outlet, and (3) articles lacking direct relevance to PA nurses. Articles were deemed directly relevant to the study’s objectives if they featured substantive discussions on the roles, responsibilities, and scope of practice of

PA nurses or their positions within healthcare workforce policies. For instance, articles that mentioned PA nurses only in passing without elaboration were excluded. This process yielded 3,564 articles for final analysis.

Figure 1 presents the monthly frequency distribution and cumulative percentage of news articles published during the study period, with annotations highlighting key events related to the Nursing Act and healthcare system reforms in Korea. This visualization contextualizes fluctuations in media coverage over time. Mapping article frequency against major events provides a temporal framework for subsequent content analysis.

3. Analysis procedures

1) Keyword selection and data preprocessing

The collected news articles were stored in Excel files (Microsoft Corp.), with key information such as titles and primary content extracted for analysis. During data preprocessing, typographical

and spacing errors were corrected through manual verification and Microsoft Excel's spell check function. Irrelevant stop words, including conjunctions, were removed to refine the text and ensure alignment with the study's analytical objectives [18].

To ensure that compound expressions such as “physician assistant,” “central emergency medical center,” and “tertiary hospital” were treated as single units, 31 predefined terms were designated before analysis (Supplementary Table 1). Additionally, semantically similar expressions were grouped into 25 synonym categories (Supplementary Table 2). For example, “PA nurse,” “medical support personnel,” “medical assistant personnel,” “dedicated supervising nurse,” and “clinical support” were unified under the term “physician assistant nurse.” To further refine the dataset, 114 exclusion words—such as “at that time,” “meanwhile,” and “eventually”—were automatically removed owing to their lack of semantic value or relevance to the study's objectives (Supplementary Table 3).

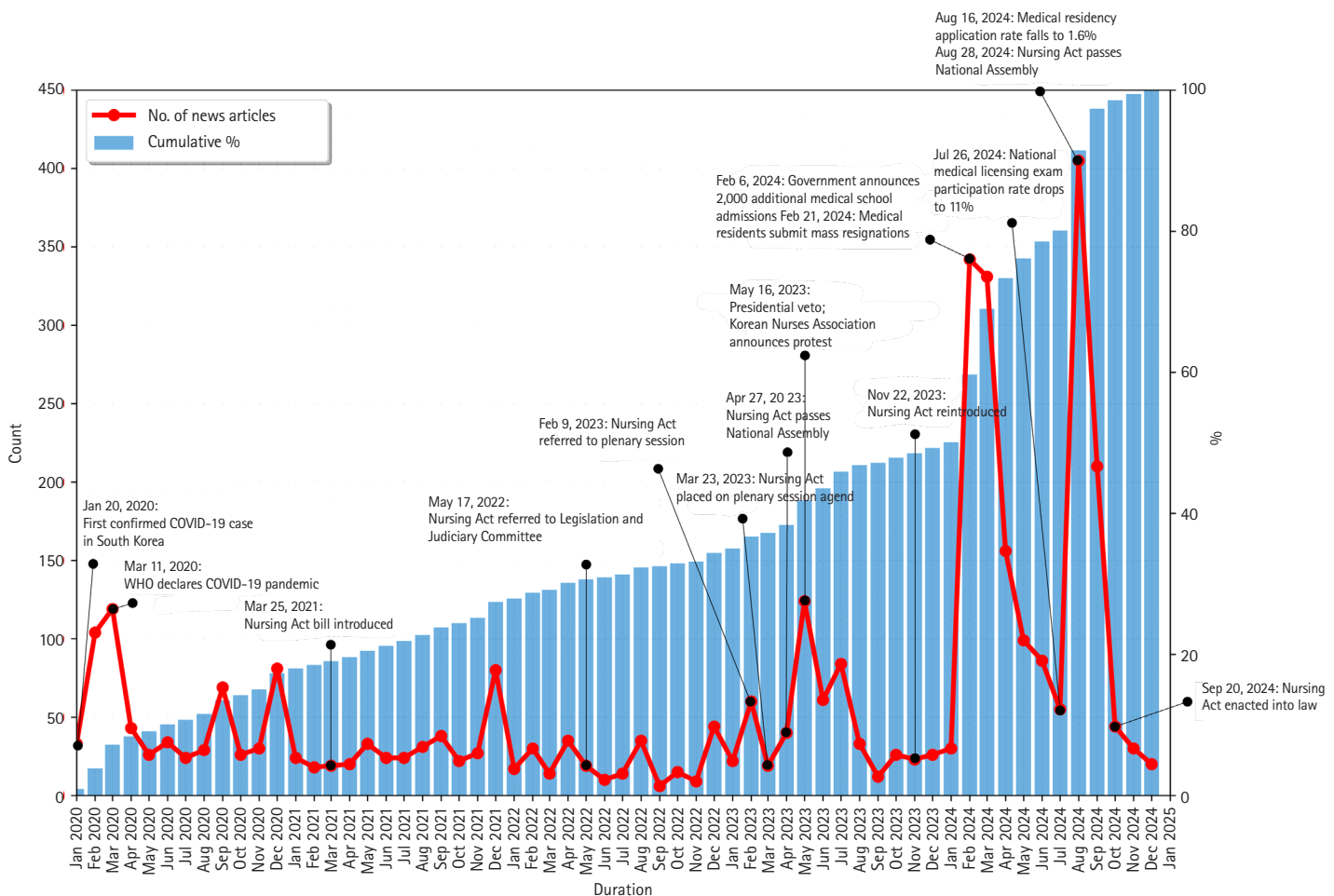


Figure 1. Monthly news coverage and cumulative percentage of articles (2020–2024).

2) Term frequency and term frequency-inverse document frequency

We calculated the term frequency (TF) of each word within each article and determined its inverse document frequency (IDF), which quantifies how infrequently a word appears across the entire dataset. The TF-IDF score, derived by multiplying TF and IDF, assigns greater weight to words that occur frequently within specific articles but are relatively rare across the dataset [19,20]. This method effectively identified semantically meaningful words within each article.

3) Centrality analysis

To examine relationships among prominent keywords in the news articles, we applied network analysis techniques. Using Net-Miner ver. 4.5.1.c (Cyrax Inc.), we first constructed a two-mode “document-word” network and then converted it into a one-mode “keyword-keyword” network, wherein keywords were linked if they co-occurred within the same article [21]. We then analyzed the network’s overall size and density and calculated two centrality metrics for each node (keyword): degree centrality and betweenness centrality [22–24]. Degree centrality reflects the number of direct connections a keyword has with other keywords, while betweenness centrality indicates how often a keyword serves as a bridge within the network. This analysis identified the most central and influential keywords shaping the discourse.

4) Topic modeling

To systematically extract latent topics from the collected news articles, we applied the LDA algorithm [25], a probabilistic model that assumes each document contains multiple topics, with each topic represented by a probability distribution over specific words. By estimating both document–topic and topic–word distributions, LDA effectively identifies thematic structures within large text datasets. After inputting the preprocessed text into NetMiner ver. 4.5.1.c, we conducted more than 1,000 iterations using different topic counts and hyperparameter values (α and β) to ensure model convergence and stability. In this process, α controlled the extent to which topics were distributed across documents, while β determined the specificity of word distributions within topics.

The optimal topic configuration was identified using the UMass coherence metric [26], which quantifies semantic consistency based on word co-occurrence patterns. According to this metric, coherence scores closer to zero indicate better topic interpretability. Each model configuration ($k=2-10$) was systematically evaluated based on three criteria: UMass coherence scores, topic interpretability as judged by our interdisciplinary team, and minimal

overlap between topics. Among all tested configurations, the four-topic model ($k=4$) exhibited the best overall performance, achieving the highest coherence score (-0.406) while maintaining distinct, interpretable topics with minimal keyword redundancy.

5) Analytical validation process

An interdisciplinary team consisting of two emergency medicine researchers (D.J. and C.W.K.) and three medical education researchers (Y.G.K., S.H.P., and M.K.K.) validated all analytical procedures, from initial keyword selection and data preprocessing to final interpretation. After selecting the final topic model, the team identified key terms for each topic through a structured, multi-stage interpretation process. Team members first reviewed word clusters independently and then collaborated through focus group discussions to refine their interpretations. Any disagreements were resolved by revisiting the original articles to ensure contextual accuracy. Final topic labels were determined through three rounds of consensus-building and were systematically validated by all team members, ensuring both methodological rigor and clinical relevance in representing media discourse on PA nurses [27,28].

4. Ethical considerations

This study was exempted from formal ethical review by the Institutional Review Board (IRB) of Chung-Ang University (IRB No., 1041078-20250209-HR-030). All news articles analyzed in this study were obtained from publicly accessible sources. Data de-identification involved removing reporter identifiers, anonymizing quoted individuals, and generalizing institutional references. All datasets were securely stored with restricted access, ensuring data confidentiality.

Results

1. Keyword analysis

In the TF analysis, the most frequent keywords were “hospital” (occurring 22,605 times), “medical” (21,990 times), “patient” (14,161 times), “physician” (12,828 times), and “nurse” (11,149 times), indicating a predominant focus on healthcare institutions and personnel in the news articles. In contrast, the TF-IDF metric assigned greater weights to “workforce” (1,835), “situation” (1,826), “field” (1,608), “need” (1,557), and “task” (1,555). Although these terms—associated with structural challenges and workforce management—appeared less frequently overall, their

Table 1. Top 30 keywords ranked by term frequency and term frequency-inverse document frequency

Rank	TF		TF-IDF	
	Keywords	Frequency	Keywords	Frequency
1	Hospital	22,605	Workforce	1,835
2	Medical	21,990	Situation	1,826
3	Patient	14,161	Field	1,608
4	Physician	12,828	Need	1,557
5	Nurse	11,149	Task	1,555
6	Government	10,115	Medical college	1,514
7	Clinical service	9,936	Seoul	1,495
8	Support	6,625	Ministry of Health and Welfare	1,452
9	COVID-19	6,282	Region	1,429
10	Medical college	6,240	Institution	1,362
11	Workforce	5,420	Operation	1,360
12	Treatment	5,124	Feasibility	1,358
13	Task	4,865	Public health	1,349
14	Region	4,809	Countermeasure	1,305
15	Situation	4,556	Treatment	1,304
16	Professor	4,340	Specialty	1,276
17	Resident	4,034	System	1,270
18	Specialty	3,972	Problem	1,264
19	Seoul	3,821	Health	1,263
20	Surgery	3,658	Nationwide	1,249
21	Field	3,598	Expertise	1,240
22	Emergency room	3,593	Abnormality	1,237
23	Need	3,477	Resident	1,220
24	Hospital bed	3,474	Public	1,217
25	Public	3,473	Physician assistant nurse	1,203
26	Center	3,455	Gap	1,174
27	Problem	3,426	Plan	1,157
28	Ministry of Health and Welfare	3,396	Surgery	1,120
29	Institution	3,365	Shortage	1,116
30	Medical staff	3,281	Medical staff	1,103

TF, term frequency; TF-IDF, term frequency-inverse document frequency.

high TF-IDF scores indicate that they were disproportionately concentrated in specific articles rather than evenly distributed across the entire corpus. This pattern highlights their stronger semantic distinctiveness as document-specific terminology (Table 1).

2. Text network analysis

1) Centrality analysis

The text network constructed from the collected keywords consisted of 11,041 nodes and 73,725 links, with an average degree of 13.355 and a density of 0.001. Keywords with high degree centrality included “hospital” (.138), “medical” (.121), “patient” (.101), “physician” (.100), “government” (.088), and “nurse” (.081), indicating extensive direct linkages within the discourse. These keywords also ranked highly in betweenness centrality, underscoring

their role as key intermediaries in connecting different parts of the network (Table 2).

3. Topic modeling

1) Topic modeling analysis of media coverage on PA nurses

To identify the optimal topic structure, we conducted systematic model optimization using various parameter settings. A four-topic LDA model with hyperparameters $\alpha=.02$ and $\beta=.01$ was selected based on its UMass coherence score (−.406). Each topic was labeled according to its most representative keywords. The first topic, appearing in approximately 30.4% of the articles, was labeled “healthcare workforce expansion policies.” It featured keywords such as “medical,” “government,” “physician,” “medical college,” and “clinical service,” reflecting concerns over workforce shortages and related policy initiatives introduced by the govern-

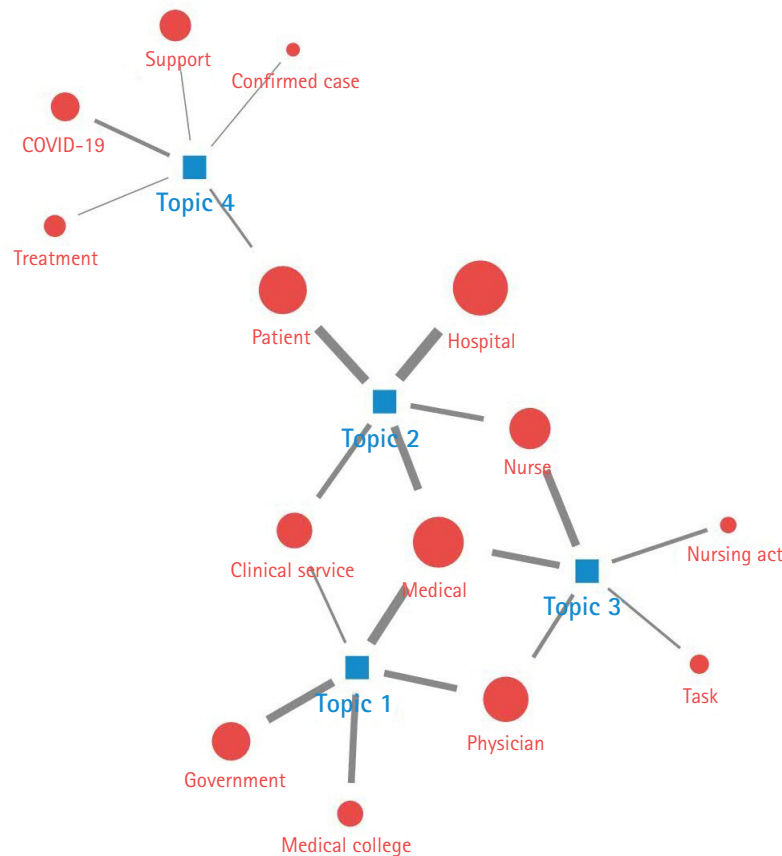
Table 2. Top 30 keywords ranked by centrality metrics

Rank	Keywords	Degree centrality	Keywords	Betweenness centrality
1	Hospital	.138	Hospital	.111
2	Medical	.121	Medical	.078
3	Patient	.101	Patient	.059
4	Physician	.100	Physician	.053
5	Government	.088	Government	.041
6	Nurse	.081	Nurse	.037
7	Clinical service	.068	Support	.029
8	Support	.064	Medical college	.024
9	Medical college	.053	Professor	.022
10	Professor	.052	Region	.021
11	Region	.052	Clinical service	.020
12	Treatment	.048	Treatment	.017
13	Need	.046	Seoul	.017
14	Medical staff	.046	COVID-19	.016
15	Situation	.045	Medical staff	.015
16	COVID-19	.044	Center	.014
17	Feasibility	.043	Video	.014
18	Public	.041	Public	.013
19	Operation	.040	Surgery	.013
20	Problem	.040	Daegu	.012
21	Center	.038	Representative	.012
22	Workforce	.038	Situation	.012
23	Task	.038	Clinic	.012
24	Field	.037	Society	.011
25	Surgery	.037	South Korea	.011
26	Specialty	.037	Operation	.011
27	Resident	.036	Need	.011
28	Ministry of Health and Welfare	.036	Field	.011
29	Emergency room	.035	Feasibility	.010
30	Society	.035	Public health	.010

ment and academic institutions. The second topic, appearing in 23.5% of the articles, was labeled “hospital clinical practice and operational management.” It focused on patient care and workforce distribution in clinical settings, with keywords including “hospital,” “patient,” “medical,” “nurse,” and “clinical service.” The third topic, appearing in 17.8% of the articles, was titled “institutionalization of the PA nursing role.” Here, prominent keywords such as “nurse,” “medical,” “nursing act,” “physician,” and “task” reflected ongoing discussions about the legal recognition of PA nurses and the definition of their scope of practice. The fourth topic, appearing in approximately 28.3% of the articles, was titled “COVID-19 response and public health crisis management.” This topic encompassed emergency response efforts and strategies to strengthen public health capacity during infectious disease outbreaks, with keywords including “COVID-19,” “patient,” “confirmed case,” “support,” and “treatment.” Figure 2 illustrates the keyword distributions for each identified topic.

2) Topic trends by year

A year-by-year analysis of topic modeling revealed clear shifts in media attention between 2020 and 2024. In 2020, “COVID-19 response and public health crisis management” (Topic 4) dominated coverage, appearing in 426 articles, while the remaining topics received significantly less attention (Topic 1: 39 articles; Topic 2: 123; Topic 3: 30). From 2021 to 2023, interest in Topic 4 declined steadily, with article counts dropping to 184 in 2021, 141 in 2022, and 119 in 2023. Over the same period, Topic 2 maintained moderate but uneven coverage—135 articles in 2021, 61 in 2022, and 180 in 2023. By contrast, the most dramatic shifts occurred in 2024. Coverage of Topic 1 surged to 926 articles, a ten-fold increase from the previous year’s total of 82. Topic 3 also saw substantial growth, appearing in 405 articles—nearly triple its 2023 count. Topic 2 followed suit, rising to 337 articles. Meanwhile, Topic 4 experienced a modest rebound, increasing slightly to 140 articles. These year-over-year trends are illustrated in Figure 3.



Topic	Topic label	Keywords	No. (%)
Topic 1	Healthcare workforce expansion policies	Medical, government, physician, medical college, clinical service	1,082 (30.4)
Topic 2	Hospital clinical practice and operational management	Hospital, patient, medical, nurse, clinical service	836 (23.5)
Topic 3	Institutionalization of the physician assistant nursing role	Nurse, medical, nursing act, physician, task	636 (17.8)
Topic 4	COVID-19 response and public health crisis management	COVID-19, patient, confirmed case, support, treatment	1,010 (28.3)

Figure 2. Topic-keyword map generated from topic modeling analysis.

Discussion

This study contributes to the literature by quantitatively analyzing how Korean media has framed the institutionalization of PA nurses within the broader context of healthcare workforce management and system adaptation. The findings offer empirical insights to guide policy development and operational strategies across multiple key domains.

First, our TF-IDF analysis revealed that structural workforce-related terms—such as “workforce” (1,835), “need” (1,557), and “task” (1,555)—carried high semantic weight despite their lower TF compared to that of clinical terms. This indicates that media discourse on PA nurses extends beyond role-specific descriptions to address overarching concerns about workforce structure. These findings are in line with previous research outcomes on task shifting and role redistribution in healthcare policy

[29,30], providing quantitative support for the central role of structural workforce considerations in media portrayals of PA nurse institutionalization.

Second, the high centrality and frequency of clinical terms such as “hospital,” “medical,” “patient,” “physician,” and “nurse” in our network analysis indicated that discussions on PA nurses have primarily emphasized clinical practice rather than abstract policy debates. Specifically, media coverage framed PA nurse institutionalization as a response to healthcare delivery gaps, with these interconnected clinical terms reinforcing their role in addressing critical service shortages. This trend mirrors international patterns in nursing role expansion [31,32], suggesting that policy discussions on PA nurses may be most persuasive when grounded in healthcare delivery improvements and patient care outcomes.

Third, the high betweenness centrality of “government” (.041) in our network analysis empirically confirmed its role as a key in-

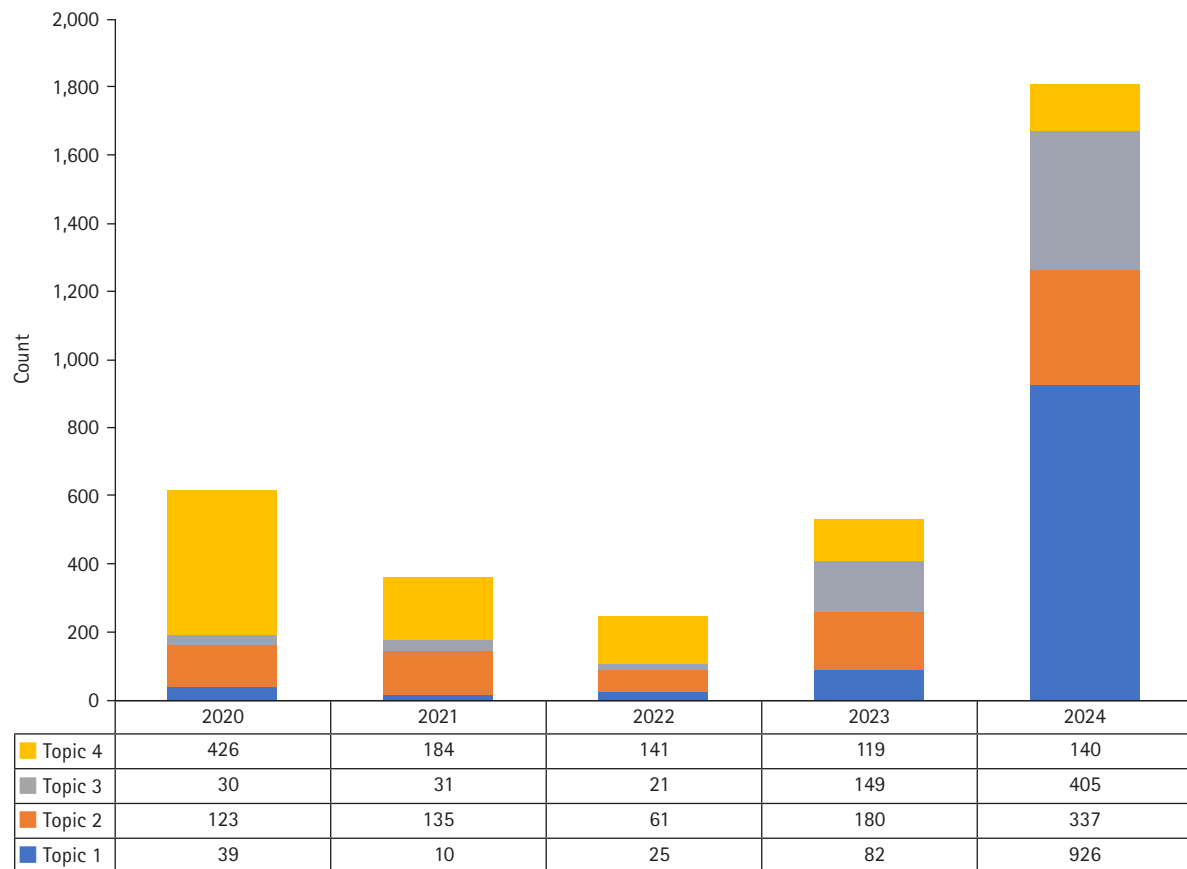


Figure 3. Yearly trends in topic distribution.

termediary in the discourse network. This finding provides statistical validation that government actions and policies function as key connectors in the institutionalization debate, supplementing insights from earlier qualitative research [9,33]. The network position of “government” relative to clinical terms suggests that successful policy implementation requires government agencies to issue directives while actively mediating among stakeholders to align diverse perspectives.

Fourth, our topic modeling analysis revealed thematic and temporal shifts in media discourse on PA nurses across the study period. The weaker representation of direct discussions on institutionalization of the PA nursing role (Topic 3, 17.8%) compared to that of broader healthcare workforce expansion policies (Topic 1, 30.4%) suggests that media framed PA nurse issues within the broader healthcare system rather than as isolated regulatory concerns. Our topic modeling analysis revealed notable keyword overlap across the four identified topics, with terms such as “medical,” “physician,” “patient,” “hospital,” and “nurse” appearing under multiple topics. This overlap reflects the interconnected nature of healthcare discourse, where clinical terms serve as anchoring

concepts across different contexts. As illustrated in Figure 2, these key terms function as bridge concepts: “medical” appears prominently at the center; “physician” links Topics 1, 2, and 3; “patient” connects Topics 1, 2, and 4; “hospital” bridges Topics 1 and 2; and “nurse” connects primarily Topics 2 and 3. Rather than representing a methodological limitation, this pattern illustrates how PA nurse discourse naturally integrates dimensions of clinical practice, policy development, and workforce management. This finding aligns with established healthcare role implementation frameworks [34], which emphasize that successful role integration requires addressing interconnected clinical and policy dimensions in tandem.

Our temporal analysis revealed a clear shift from pandemic-focused coverage in 2020 (Topic 4: 426 articles) to intensified discourse on workforce policy and the institutionalization of PA nursing in 2024 (Topic 1: 926 articles; Topic 3: 405 articles). This transition coincided with the national medical crisis and the passage of the Nursing Act. The pattern aligns with policy window theory [35,36], illustrating how crises within the healthcare system can elevate previously peripheral issues to the center of policy at-

tention.

The developmental trajectory of PA nurse institutionalization shares fundamental similarities with the evolution of other healthcare roles in Korea, though it followed a distinct pathway. Like emergency medicine, which emerged as a formal specialty in the wake of national disasters between 1993 and 1995—driven by the “spontaneous demands of the nation and its citizens,” rather than by professional lobbying or self-interest [37]—the institutionalization of PA nurses ultimately responded to the same societal needs. However, while emergency medicine arose from acute, identifiable crises, the PA role evolved through a more gradual and submerged process. Despite their long-standing presence within the Korean healthcare system over several decades, PA nurses remained an unrecognized profession, operating beneath the surface of formal healthcare structures. This institutional invisibility persisted until the 2024 workforce crisis catalyzed their emergence from the shadows, transforming their role from an informal internal staffing solution into a formally recognized and vital response to national healthcare demands. The crisis thus served not to create the PA role, but rather to re-illuminate and legitimize a workforce that had been quietly filling critical gaps in healthcare delivery for years.

Our findings offer robust empirical evidence that media portrayals of the PA nurse role shifted from a marginal regulatory concern in 2020 to a central component of healthcare reform by 2024. This change underscores that workforce policy reforms tend to garner greater attention from both the public and policymakers when framed as part of broader efforts to address concrete clinical challenges. The concurrent surge in media coverage of workforce policy, clinical practice, and PA nurse-related topics during 2023–2024 further suggests that innovations in healthcare staffing gain legitimacy when they are presented as responses to demonstrable public health needs, rather than as efforts to expand professional boundaries. These findings highlight the importance of framing future workforce reforms around specific healthcare delivery gaps and emphasize that the successful integration of new healthcare roles depends not only on crisis-driven visibility but also on sustained, systematic policy institutionalization.

Despite these contributions, this study has several limitations. First, the inherent limitations of morphological analysis tools may have introduced processing errors, particularly in handling compound nouns and non-standard terminology [38]. Second, our analysis was limited to nine major media outlets, excluding discourse from platforms such as online communities and social media, where healthcare professionals—including nurses—may express alternative perspectives. Third, the predominantly

quantitative approach of this study limited our ability to capture qualitative nuances, such as emotional reactions embedded in news texts or professional identity concerns relevant to nursing practice. Fourth, our analysis of media discourse offered insight into the public framing of PA nurse institutionalization but could not establish a causal relationship between media representations and actual policy development. The patterns observed in media coverage reflected only one facet of healthcare workforce discourse and highlighted the need for complementary methodologies—such as policy document analysis and stakeholder research—to develop a more holistic understanding of the PA nurse role's evolution. Fifth, our analysis failed to account for the institutional and structural dimensions of media production influencing content development. Differences in editorial policies, information sourcing practices, and organizational perspectives across media outlets likely contributed to variations in discourse that extended beyond topic distribution alone. These structural dynamics constitute an important dimension for future research on healthcare policy representation. Sixth, the study was confined to a fixed time frame, underscoring the need for longitudinal investigations. Thus, future research should incorporate diverse data sources, including professional nursing publications and forums, and employ integrated qualitative and quantitative methods to gain deeper insight into the multidisciplinary implications of PA nurse institutionalization—especially from the perspective of nurses transitioning into PA roles.

Conclusion

This study examines how media discourse shapes the institutionalization of emerging healthcare roles during periods of systemic change. Based on our analysis, we identify three key theoretical insights relevant to workforce development paradigms: First, the legitimacy of evolving professional roles is established primarily through their integration into recognized clinical knowledge frameworks, rather than through regulatory mechanisms alone. Second, opportunities for workforce innovation are most likely to arise when media narratives frame new roles in relation to specific public health needs, rather than as matters of disciplinary boundary disputes. Third, the centrality of clinical terminology as conceptual bridges within discourse networks suggests that effective implementation requires coordinated integration across the dimensions of clinical practice, governance, and organizational management.

These conceptual contributions carry important implications for healthcare stakeholders working within complex workforce

systems. For instance, policymakers should consider strategically framing new roles in clinical contexts to enhance legitimacy and stakeholder support. Healthcare institutions can use media discourse analysis as a signal of policy shifts. Educational nursing institutions must prepare practitioners to navigate both clinical and policy aspects of role implementation. As healthcare systems worldwide confront workforce distribution challenges, strategically positioning staffing innovations within broader medical system optimization narratives may be essential for successful implementation.

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Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

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Please contact the corresponding author for data availability.

Supplementary Data

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