

Mapping Current Trend Of Nursing Service Quality Research In Indonesia

Pemetaan Tren Terkini Penelitian Kualitas Layanan Keperawatan Di Indonesia

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ABSTRACT

Nursing service quality (NSQ) is the cornerstone of high-impact care, strengthening healthcare systems, and showcasing the highest standards of professional excellence. This systematic literature review (SLR) aims to explore the current NSQ literature within the Indonesia context by examining research trends, theoretical frameworks, key concepts, and future directions. 137 articles published between 2009 and 2024 in the Scopus database was systematically screened and analyzed using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework. The analysis identified five major research streams: nursing practice and patient care, quality of life and patient-centered outcomes, hospital management and healthcare systems, emerging healthcare challenges, and pandemic response. Four key antecedents of NSQ were identified: staffing and resources, training and competencies, leadership and administration, and health system infrastructure, along with four core elements: interpersonal care, crisis response, practice competence, and support systems. The analysis also highlights four primary consequences of NSQ: patient outcomes, nurse well-being, social impact, and organizational performance. Future research should focus on workforce well-being, leadership and organizational dynamics, patient safety and ethical standards, and integrated, population-specific nursing care. These insights provide a strategic roadmap for advancing NSQ research and practice in Asia.

Keywords: Service Quality; Nursing Service Quality; Indonesia; Systematic Literature Review.

ABSTRAK

Kualitas layanan keperawatan (NSQ) merupakan landasan utama dalam memberikan perawatan berimbang tinggi, memperkuat sistem kesehatan, dan menampilkan standar profesionalisme tertinggi. Tinjauan Literatur Sistematis (TLS) ini bertujuan untuk mengeksplorasi literatur NSQ dalam konteks Indonesia dengan menganalisis tren penelitian, kerangka teoritis, konsep kunci, dan arah masa depan. Sebanyak 137 artikel yang diterbitkan antara tahun 2009 dan 2024 di basis data Scopus disaring dan dianalisis secara sistematis menggunakan kerangka kerja Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Analisis mengidentifikasi lima aliran penelitian utama: praktik keperawatan dan perawatan pasien, kualitas hidup dan hasil yang berpusat pada pasien, manajemen rumah sakit dan sistem kesehatan, tantangan kesehatan yang muncul, dan respons terhadap pandemi. Empat prasyarat utama NSQ diidentifikasi: tenaga kerja dan sumber daya, pelatihan dan kompetensi, kepemimpinan dan administrasi, serta infrastruktur sistem kesehatan, bersama dengan empat unsur inti: perawatan antarpersonal, respons krisis, kompetensi praktik, dan sistem dukungan. Analisis ini juga menyoroti empat konsekuensi utama NSQ: hasil pasien, kesejahteraan perawat, dampak sosial, dan kinerja organisasi. Penelitian masa depan harus fokus pada kesejahteraan tenaga kerja, kepemimpinan dan dinamika organisasi, keamanan pasien dan standar etika, serta perawatan keperawatan terintegrasi yang spesifik untuk populasi. Wawasan ini menyediakan peta jalan strategis untuk mengembangkan penelitian dan praktik NSQ di Asia.

Kata Kunci: Kualitas Layanan, Kualitas Layanan Keperawatan, Indonesia, Ulasan Literatur Sistematis.

1. Introduction

High-quality healthcare services are essential for improving clinical outcomes, enhancing patient safety, increasing satisfaction, and optimizing health system performance (Suprpto et al., 2024; Lebo & Mandagi, 2023). As healthcare systems globally contend with increasing patient complexity, workforce shortages, rising operational costs, and the long-term ramifications of the COVID-19 pandemic, the imperative to prioritize service quality has intensified (Inaray et al., 2024; Mandagi et al., 2024). Within this broader strategic landscape, nursing service quality (NSQ) emerges as a cornerstone of healthcare transformation. Nurses play a pivotal role not only as skilled clinicians but also as compassionate caregivers whose sustained interactions with patients are crucial to delivering safe, effective, and dignified care (Christina et al., 2024; Sapeni & Said, 2020). Deficiencies in nursing care, whether due to understaffing, burnout, or inadequate supervision, can lead to adverse patient outcomes and systemic inefficiencies, underscoring the need for sustained research and investment in NSQ (Suyatno et al., 2023).

NSQ contributes significantly to the overall performance and safety of healthcare systems. High-quality nursing services have been linked to lower rates of hospital readmissions, improved chronic disease management, and enhanced patient satisfaction (Abdurrouf et al., 2024; Wahyuningsih et al., 2024). Moreover, patient-centered and empathetic nursing care fosters trust and psychosocial healing, while also supporting coping strategies for vulnerable populations such as the elderly or those with life-limiting conditions (Abdurrouf et al., 2024; Sapeni & Said, 2020). When nursing practice upholds ethical standards, clinical competence, and collaborative teamwork, it builds a culture of continuous quality improvement and strengthens institutional resilience (Christina et al., 2024; Kusumawati et al., 2024). Ultimately, NSQ not only influences clinical metrics but also reinforces hospital reputation, staff morale, and long-term sustainability.

Despite its recognized importance, research on NSQ remains disproportionately concentrated in Western contexts such as North America, Europe, and Australia, where institutional structures, nursing education, and care delivery models differ markedly from those in Southeast Asia (Griffiths et al., 2012; Fatima et al., 2019). This geographical imbalance has resulted in a literature gap, particularly in understanding the culturally nuanced, resource-variable, and policy-sensitive nature of nursing in countries like Indonesia. For instance, the diversity in clinical competencies, educational pathways, and healthcare governance across Indonesian provinces poses challenges that Western frameworks are often ill-equipped to address (Mulyanto et al., 2019). While existing studies have examined service quality dimensions (Fatima et al., 2019; Putri et al., 2022; Inaray et al., 2024), few have offered a comprehensive bibliometric and thematic mapping of NSQ research specific to Indonesia. This oversight hinders evidence-based policy development and context-relevant educational strategies. Therefore, this study addresses a pressing need by mapping the landscape of NSQ research in Indonesia, identifying core themes, gaps, and emerging priorities to support the advancement of nursing quality in low- and middle-income healthcare systems.

This study makes four novel contributions to the literature on healthcare service quality, with a particular focus on the Indonesian context. First, it presents a comprehensive research profile of NSQ over the past two decades, highlighting publication trends, theoretical approaches, and methodological choices. Second, it identifies five dominant research streams that define the field. Third, the study proposes a framework outlining the antecedents, core dimensions, and outcomes of NSQ in Indonesian healthcare settings. Finally, it offers a foundational roadmap for future research and practice, emphasizing the need for culturally and

institutionally responsive strategies that address Indonesia’s unique healthcare landscape. These contributions help bridge a critical knowledge gap and offer new insights into how NSQ can be enhanced in diverse, resource-constrained environments.

The objective of this study is to explore the evolution, current state, and future directions of nursing service quality research in Indonesia. Specifically, it aims to answer the following research questions:

RQ1. What is the publication trends of existing studies on NSQ in the Indonesian context?

RQ2. What is the performance profile of NSQ research in Indonesia?

RQ3. What is the underlying knowledge structure in the field of NSQ within Indonesia context?

RQ4. What directions and opportunities exist for future research in NSQ in Indonesia context?

2. Methodology

This study adopts a systematic literature review (SLR) to map the intellectual structure of research on nursing service quality, with a specific focus on Indonesia as representative of the wider Asian context. The SLR method, implemented through a rigorously defined research protocol, guarantees transparency, objectivity, and replicability, thereby strengthening the credibility of the resulting insights (Shrivastava & Mishra, 2025).

Guided by the PRISMA framework, originally devised for systematic reviews and meta-analyses in healthcare, the review progressed through the four canonical stages of identification, screening, eligibility, and inclusion (Welch et al., 2021). All searches were conducted in the Scopus database, chosen for its extensive index of peer-reviewed journals. The search string “nursing AND service AND quality” was applied to article titles, abstracts, and keywords, and was restricted to publications classified within the Nursing and Medicine subject areas.

To maintain thematic precision, only English-language journal articles published between 2009 and 2024 were considered. Excluded were book chapters, conference papers, practical reports, theses/dissertations, working papers, items from predatory outlets, non-English publications, and records lacking full-text access. Moreover, the eligibility filter required that each study explicitly investigate nursing service quality in an Indonesian context.

A concise overview of these parameters—including document type, data source, time frame, search field, language, search terms, subject area, and detailed inclusion/exclusion criteria—is provided in Table 1 (Research Protocol). Together, these stringent criteria produce a clear audit trail and ensure that the synthesized evidence faithfully reflects the state of knowledge on nursing service quality in Indonesia and, by extension, contributes valuable regional insight to the broader Asian healthcare discourse

Table 1. Research Protocol

Research Protocol	Description
Document type	Scientific articles from Journal
Source	Scopus Database
Time frame	2009-2024
Search field	Title, abstract & keywords
Language	English
Search terms	(nursing AND service AND quality)
Subject area	Nursing and Medicine
Inclusion criteria	Articles focus on nursing service quality in the context of Indonesia

Exclusion criteria Studies originating from non-peer reviewed books, book chapters, conference papers, practical reports, theses/ dissertations, working papers and predatory journals, non-English articles and articles without full text.

Source(s): Authors' own work (2025)

As illustrated in Figure 1, the initial search yielded 269 documents from the Scopus database. A stepwise screening process was conducted to refine the sample. First, 77 articles falling outside the scope of the study were excluded. Then, 16 articles unrelated to the subject area were removed, followed by 34 non-English publications. After that, 30 non-journal articles were excluded. The screening process concluded with the removal of 5 articles due to unavailable full texts. This resulted in a final sample of 137 full-text, peer-reviewed journal articles in English that were aligned with the relevant subject area.

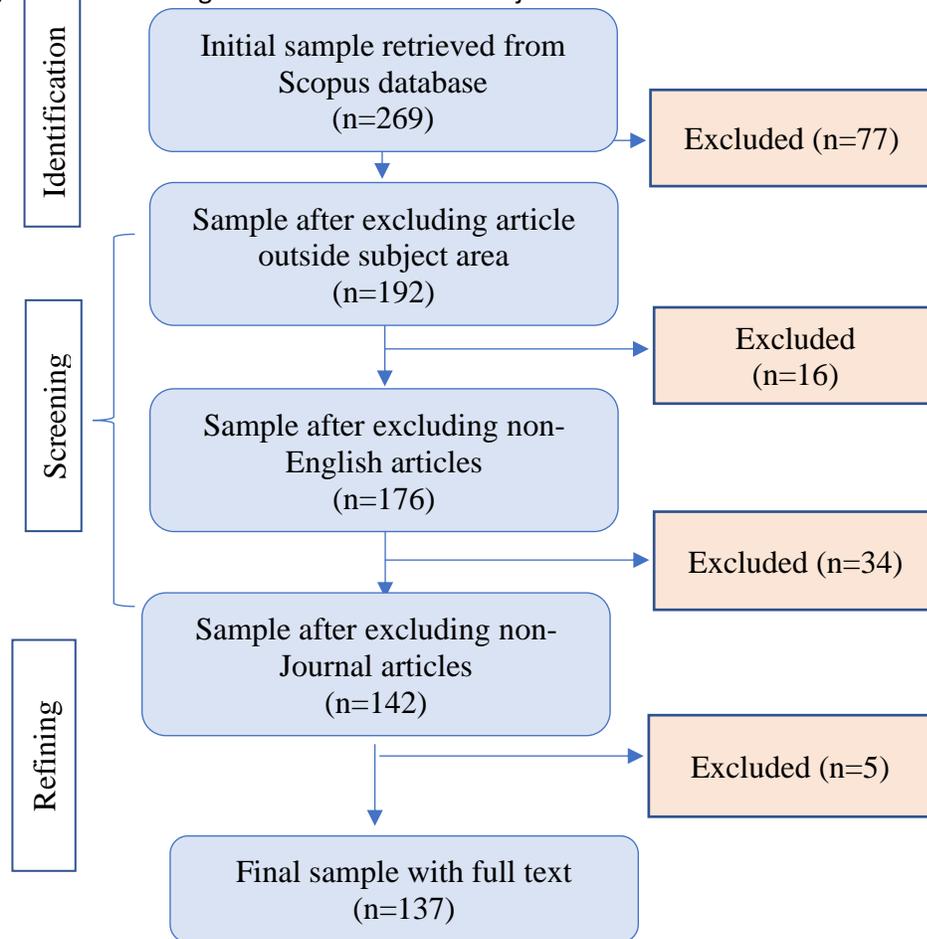


Figure 1. Article Selection Process
Source(s): Authors' own work (2025)

3. Results and Discussion
Research profile on NSQ

Publication trends

Figure 2 displays the annual distribution of publications and citations on NSQ from 2000 to 2024. Between 2000 and 2016, research activity was minimal, with nearly no publications or citations recorded. A gradual increase began in 2017, signaling the emergence of academic interest in the field. The number of documents rose notably in 2018, reaching 12 publications, followed by a significant peak in 2019 with 24 publications, the highest output within the observed period. Although publication counts slightly fluctuated in subsequent years, they remained consistently high, ranging between 11 and 18 documents annually through 2024. Citation trends followed a parallel trajectory, with a sharp rise beginning in 2019 and peaking in 2023 at over 130 citations. Despite a decline in 2024 citations, the overall trend indicates growing scholarly engagement and an expanding knowledge base in NSQ, particularly in the post-pandemic period. This sustained growth reflects the increasing relevance and academic momentum of NSQ research.

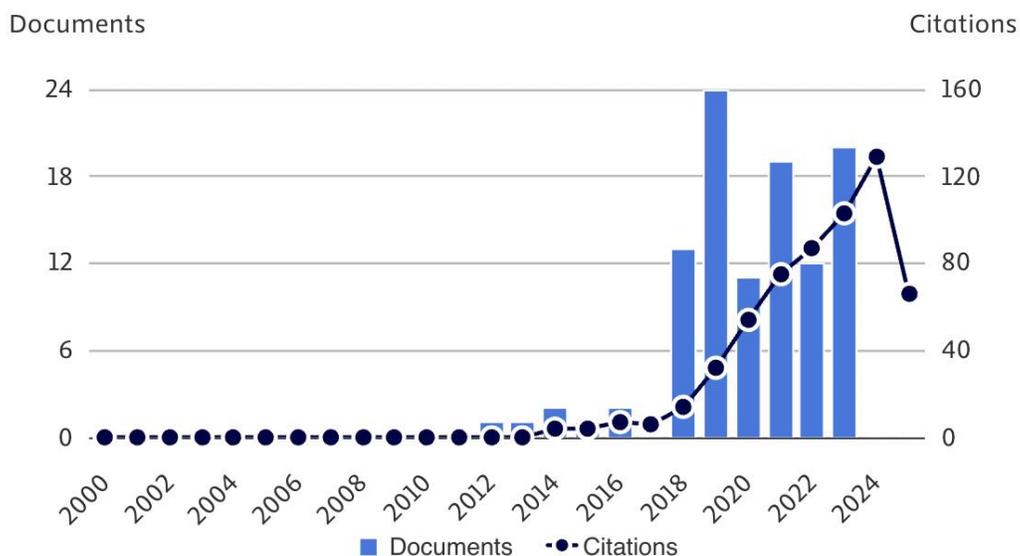


Figure 2. Number of Publication and Citation Per Year
 Source(s): Authors’ own work (2025)

Research methodologies

Table 2 highlights the predominant research methodologies employed in NSQ studies, with qualitative methods being the most widely used. Interviews emerge as the leading qualitative approach (n = 247), followed by content/textual analysis and case studies, reflecting a strong emphasis on in-depth, contextual understanding. Quantitative research is primarily driven by survey methods (n = 254), indicating a focus on structured data collection to enable broader generalization. Mixed-methods studies are also on the rise, reflecting a growing trend toward integrating qualitative insights with quantitative data. This shift suggests an increasing recognition of the importance of context, particularly cultural, institutional, and policy differences, which is especially critical in diverse healthcare settings across Asia.

Table 2. Most Commonly used research methodology

Research Strategy	Methodology	Total Articles	Sample Studies
Qualitative	Interviews	30	Trisyani Y & Windsor (2019); Kurniati et al. (2021); Hidayat et al., (2023); Wardah et al. (2020).
	Systematic Literature Review	8	Kurniawan & Hariyat (2019); Monalisa et al. 2023); Zendrato et al. (2019)
	Content/Textual Analysis	5	Suprptoa et al. (2024); Catalan & Luna (2021); Asmaningrum & Tsai (2018); Wahyuningsih et al. (2020).
	Focus-Group Discussion	6	Lusmilasari. et al. (2020); Hidayat et al. (2023); Zulfatul & Nuntaboot. (2023); Dhaniaputri & Arini (2024); Hariyati & Sahar (2012)
	Case-Study Approach	1	Kurniawan et al. (2021)
Quantitative	Survey	19	Nadeak et al. (2019); Purba et al. (2023); Wahdatin et al. (2019); Sahputra et al. (2021); Andy et al. (2022); Kusumawati et al. (2024).
Mixed Methods	Mixed Methods	6	Effendy & Yodang (2020); Sapeni & Said (2020); Sahputra et al. (2021).

Source(s): Authors' own work (2025)

Performance profile of research on NSQ

Most influential journals

Table 3 highlights the top 10 most influential journals in the field of NSQ research based on the volume of published articles. *Enfermeria Clinica* leads with 16 publications and a total of 98 citations, resulting in a moderate citation-per-article (CPA). The *Indian Journal of Public Health Research and Development* follows with 13 articles, though it reflects a lower citation impact (TC = 39, CPA = 3). Other notable contributors include the *Open Access Macedonian Journal of Medical Sciences and Healthcare in Low-Resource Settings*, both publishing fewer articles ($n = 8$ and $n = 5$, respectively) and showing minimal citation performance. Journals such as *Belitung Nursing Journal* and *Jurnal Keperawatan Padjadjaran*, despite having only four articles each, demonstrate a slightly higher CPA of 4. In contrast, titles like *Bali Medical Journal*, *Indian Journal of Forensic Medicine and Toxicology*, and *Pakistan Journal of Medical and Health Sciences* exhibit both low publication volume and minimal citation counts. Collectively, these journals reflect a growing but uneven influence within the NSQ research landscape, with a mix of regional and open-access publications contributing to the field's development.

Table 3. Most influential journals by number of articles published in this field (Top 10)

Source Title	Publisher Name	TA	TC	CPA
<i>Enfermeria Clinica</i>	Sciendo Doyma	16	98	6
<i>Indian Journal of Public Health Research and Development</i>	Institute of Medico-Legal Publications	13	39	3
<i>Open Access Macedonian Journal of Medical Sciences</i>	Scientific Foundation SPIROSKI	8	13	2
<i>Healthcare in Low-Resource Settings</i>	Emerald Group Press Publications	5	2	0

Source Title	Publisher Name	TA	TC	CPA
Journal of Nursing	School of Nursing, Universitas Airlangga	4	8	2
Indonesian Medical Journal	Angklah General Hospital	4	2	0
Journal of Nursing Journal	Belitung Raya Publisher - Belitung Raya Foundation	4	16	4
Journal of Keperawatan Padjadjaran	School of Nursing, University of Padjadjaran	4	17	4
Indonesian Journal of Forensic Medicine and Toxicology	Indonesian Journal of Forensic Medicine and Toxicology	3	1	0
Iranian Journal of Medical and Health Sciences	Shore Medical And Dental College	3	1	0

Note: TA= Total articles; TC= Total citation; CPA=Citation per article
Source(s): Authors' own work (2025)

Most influential authors

Figure 3 displays the top 10 most prolific authors in NSQ research in Indonesia context, ranked by the number of published articles. Hariyati, R.T.S. and Nursalam, N. lead the group, each contributing the highest number of publications. Close behind are Efendi, F. and Sahar, J., both with strong publication outputs. Gunawan, J. also shows notable contributions, followed by Ahsan, Aunguroch, Y., Juanamasta, I.G., and Rachmawaty, R. Notably, Nursalam appears twice, suggesting collaborative work across studies. This author landscape reflects a concentrated group of Indonesian scholars driving the NSQ research agenda, emphasizing the country's leading role in advancing nursing service quality literature.

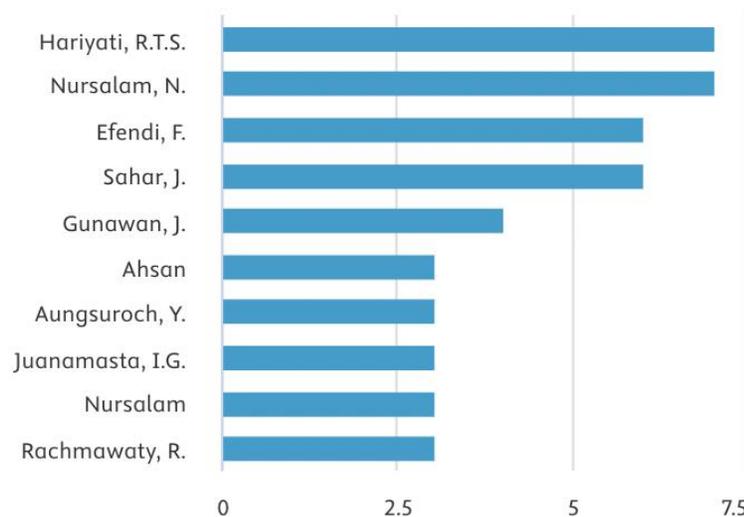


Figure 3. Most influential authors by number of articles published in this field (Top 10)
Source(s): Authors' own work (2025)

Top contributing institutions

Figure 4 presents the top 10 institutional affiliations contributing to NSQ research in Indonesia, ranked by the number of published articles. Universitas Airlangga and Universitas Indonesia lead the field, each with the highest number of publications, demonstrating their central role in advancing nursing service quality scholarship in Indonesia. They are followed by Brawijaya University, with a notable publication output, and Universitas Padjadjaran and Hasanuddin University, both making significant contributions. Other key institutions include Universitas Gadjah Mada, Universitas Jember, Universitas Diponegoro, Universitas Andalas and Universitas Muhammadiyah Yogyakarta. This distribution reflects the dominant role of Indonesian academic institutions in shaping the NSQ research landscape, with emerging contributions from regional universities in Southeast Asia.

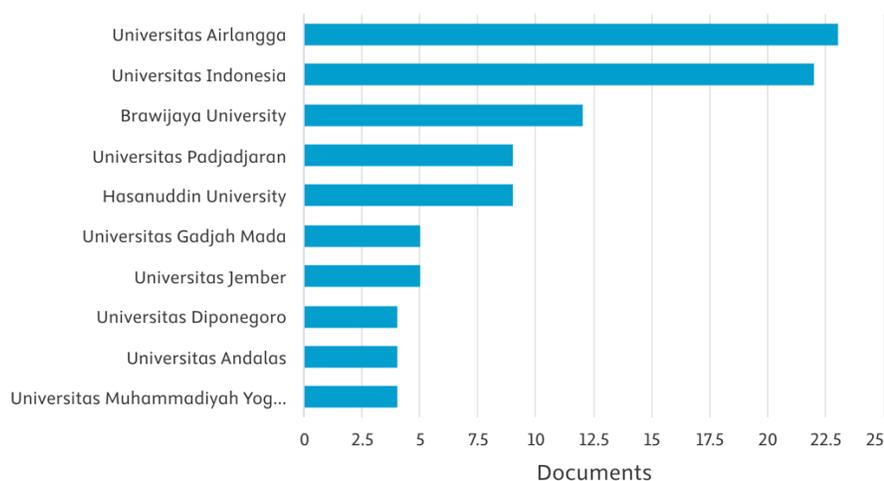


Figure 3. Most influential authors by number of articles published in this field (Top 10)

Source(s): Authors' own work (2025)

Landmark studies

Table 4 highlights the ten most-cited landmark studies in NSQ research in Indonesia, showcasing the breadth and impact of scholarly contributions to the field. Topping the list is the study by See et al. (2018), cited 84 times, which investigates professional burnout among physicians and nurses across intensive care units, offering a critical perspective. Following this, D'Ambruoso et al. (2009) received 43 citations for their confidential enquiry into the quality of care provided by Indonesian village midwives. Efendi et al. (2016) also made a notable impact with 33 citations through their analysis of how to attract healthcare students to remote areas in Indonesia. Barzallo et al. (2020) contributed a comparative 22-country study on quality of life among individuals with spinal cord injury, garnering 29 citations. Additional influential works include literature reviews by Asmirajanti et al. (2018) and Sapeni & Said (2020) on interprofessional collaboration and case-based learning in nursing education, respectively. Other cited studies explore diverse topics such as nurse competency maintenance (Rahmah et al., 2022), caregiver burden in schizophrenia (Tristiana et al., 2019), geriatric care research (Rolland et al., 2014), and self-care interventions in chronic illness (Kusnanto et al., 2018). Together, these studies emphasize the diverse and evolving dimensions of NSQ research—from clinical care and education to workforce development and chronic disease management.

Table 4. Land-mark studies on NSQ in Indonesia (ranked by total citations)

Title	Authors	Year	Source title	Cited by*
Professional burnout among physicians and nurses in Asian intensive care units: a multinational survey	See et al.	2018	Intensive Care Medicine	84
Assessing quality of care provided by Indonesian village midwives with a confidential enquiry	D'Ambruso et al.	2009	Midwifery	43
How to attract health students to remote areas in Indonesia: a discrete choice experiment	Efendi et al.	2016	International Journal of Health Planning and Management	33
Quality of life and the health system: A 22-country comparison of the situation of people with spinal cord injury	Barzallo et al.	2020	Archives of Physical Medicine and Rehabilitation	29
Clinical care pathway strengthens interprofessional collaboration and quality of health service: a literature review	Asmirajanti et al.	2018	Enfermeria Clinica	28
Nurses' efforts to maintain competence: A qualitative study	Rahmah et al.	2022	Journal of Public Health Research	26
The effectiveness of case-based learning in increasing critical thinking of nursing students: A literature review	Sapeni & Said	2020	Enfermeria Clinica	22
Relationship Between Caregivers' Burden of Schizophrenia Patient with Their Quality of Life in Indonesia	Tristiana et al.	2019	Journal of Psychosocial Rehabilitation and Mental Health	20
Nursing home research: The first international association of gerontology and geriatrics (IAGG) research conference	Rolland et al.	2014	Journal of the American Medical Directors Association	18
Self-care model application to improve self-care agency, self-care activities, and quality of life in patients with systemic lupus erythematosus	Kusnanto et al.	2018	Journal of Taibah University Medical Sciences	17

* Citation counts as of May 2025

Source(s): Authors' own work (2025)

Co-authorship network in NSQ research

A co-authorship network analysis using VOSviewer was conducted to examine collaboration in NSQ research. Based on a minimum of two co-authored publications, the map

reveals three main clusters. The green cluster centers on Nursalam and Efendi, showing strong internal collaboration. The red cluster includes Ahsan and Nursalam, while the blue cluster connects Gunawan, Juanamasta, Aunguroch, and Iblasi, reflecting international ties. The figure highlights close intra-cluster cooperation and emerging cross-cluster links, underscoring growing collaboration in the field.

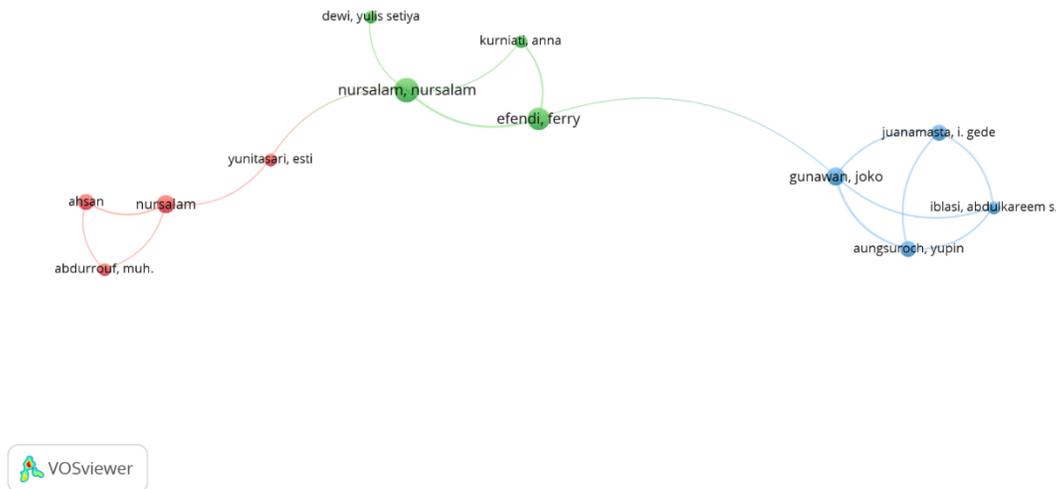


Figure 3. Co-authorship network visualization

Source(s): Authors' own work (2025)

The co-authorship network analysis in Figure 3 reveals three major collaborative clusters among leading researchers in Indonesian nursing service quality (NSQ) studies. The green cluster, anchored by Nursalam and Efendi, demonstrates strong interconnections with authors like Kurniati, Dewi, and Anna, emphasizing institutional collaboration in nursing education and practice. The red cluster, led by Nursalam in a different context, includes Ahsan and Abdurrohm, focusing more on nursing ethics and competency development. The blue cluster, guided by Gunawan, Juanamasta, and Iblasi, displays regional collaboration across Southeast Asia, particularly in cross-national studies on patient care quality.

Notably, studies such as See et al. (2018) on burnout in intensive care units (84 citations) and D'Ambruoso et al. (2009) on the quality of village midwifery care (43 citations) underscore the impact of collaborative outputs. Efendi et al. (2016), a product of the green cluster, significantly contributes to rural health policy discourse (33 citations). This clustering reveals not only thematic orientations—ranging from interprofessional collaboration to rural healthcare delivery, but also indicates how distinct author networks influence the evolution of NSQ research in Indonesia.

Current Research Trend in NSQ

Keywords co-occurrence analysis

Figure 4 and table 5 and illustrate the keyword co-occurrence network in NSQ research in Indonesia using VOSviewer, with dominant terms such as “human,” “nurse,” “nursing,” “female,” and “adult” reflecting the field’s strong clinical and demographic orientation. Four thematic clusters emerge: the red cluster focuses on nursing care, patient interaction, and Indonesia’s healthcare context; the green cluster emphasizes patient-centered outcomes like quality of life, satisfaction, and mental health; the blue cluster highlights qualitative research, patient safety, and leadership, indicating a methodological and organizational emphasis; and the

Cluster	Items (n)	Keywords	Issues/Thematic Focus	Sample Studies
● 3	17	hospital, health personnel attitude, health services, healthcare quality, organization and management, staffing, patient safety, healthcare policy, nurse staffing, leadership, nursing supervision, clinical competence, nursing standards, human resources, management quality	Hospital management and healthcare systems	Suyatno et al. (2023); Nurjanah et al. (2021); Ardian et al. (2024)
● 4	13	pandemics, COVID-19, emergency nursing, infection control, personal protective equipment, triage, disaster preparedness, resilience, psychological stress, hospital emergency service, crisis intervention, occupational exposure, outbreak response	Emerging healthcare challenges and pandemic response	Kusumawati et al. (2024); Wahyuningsih et al. (2020); Mirzaei et al. (2022)

Cluster 1 (Red) consists of 16 high-frequency keywords that revolve around the core functions of nursing practice and patient care. Central terms such as nurses, nursing care, empathy, and nursing education reflect the centrality of compassionate, competent, and patient-centered care in the nursing profession. This cluster also emphasizes challenges such as burnout, workload, and patient safety, pointing to the emotional and physical toll on nursing professionals and the critical role they play in healthcare delivery (Liu, 2013; Kaur, 2013; Zhao, 2018; Kakemam, 2021). Ethical considerations, such as nursing ethics and nurse-patient relations, highlight the importance of moral responsibility in caregiving. The presence of keywords like nursing students and healthcare team also suggests the value of education and interdisciplinary collaboration. Recent studies, including those by Suprpto et al. (2024), Kusumawati et al. (2024), and Christina et al. (2024), reinforce the foundational role of nurses in maintaining healthcare quality and ensuring patient well-being.

Cluster 2 (Green) encompasses 15 keywords centered on quality of life and patient-centered outcomes, particularly in the context of chronic conditions and aging populations. Terms such as quality of life, palliative care, and patient satisfaction reflect a growing focus on holistic and empathetic care. Other relevant keywords like caregivers, family nursing, and home care underscore the importance of familial and community support in long-term care strategies. This cluster also includes issues related to depression, pain management, and coping strategies, highlighting the need to address the psychological and emotional dimensions of healthcare (Jarrar et al., 2018; Kim et al., 2021; Khaleghi & Mohammadi, 2024). Studies such as those by Sapeni & Said (2020), Abdurrouf et al. (2024), and Wahyuningsih et al. (2024) exemplify this shift toward integrated, empathetic, and individualized care models.

Cluster 3 (Blue) features 17 keywords focused on hospital management and healthcare systems, emphasizing the administrative and organizational frameworks that support nursing

practice. Terms like nursing staff, healthcare quality, organization and management, and healthcare policy suggest that systemic efficiency is integral to effective care delivery (Kaur, 2013; Wang, 2019; Kakemam, 2021). Keywords such as leadership, staffing, nursing supervision, and human resources point to critical factors influencing workforce performance and patient outcomes. The cluster also touches on clinical competence and nursing standards, highlighting the importance of maintaining professional excellence. Research from Suyatno et al. (2023), Nurjanah et al. (2021), and Ardian et al. (2024) further emphasizes the link between leadership, policy, and healthcare service quality.

Cluster 4 (Yellow) includes 13 keywords addressing emerging healthcare challenges and pandemic response, with a strong focus on the COVID-19 pandemic and similar public health crises. Terms such as pandemics, emergency nursing, infection control, and disaster preparedness highlight the urgent need for resilience and adaptability in healthcare systems (Jiang et al., 2022; Rosa, 2020; Wu, 2015). The inclusion of personal protective equipment, triage, and occupational exposure illustrates the operational and safety-related responses required during health emergencies. Psychological aspects are also central, as indicated by keywords like resilience and psychological stress. Studies by Kusumawati et al. (2024), Mirzaei et al. (2022), and Wahyuningsih et al. (2020) underscore the evolving demands placed on healthcare professionals in crisis situations and the necessity for robust emergency preparedness and support systems.

Overlay visualization of keywords over time

The overlay visualization of nursing-related research, as depicted in Figure 5, illustrates the thematic evolution of the field from approximately 2012 to 2020. A color gradient—from blue (earlier studies) to yellow (more recent studies)—reflects the shifting research focus over time, as revealed through keyword co-occurrence analysis.

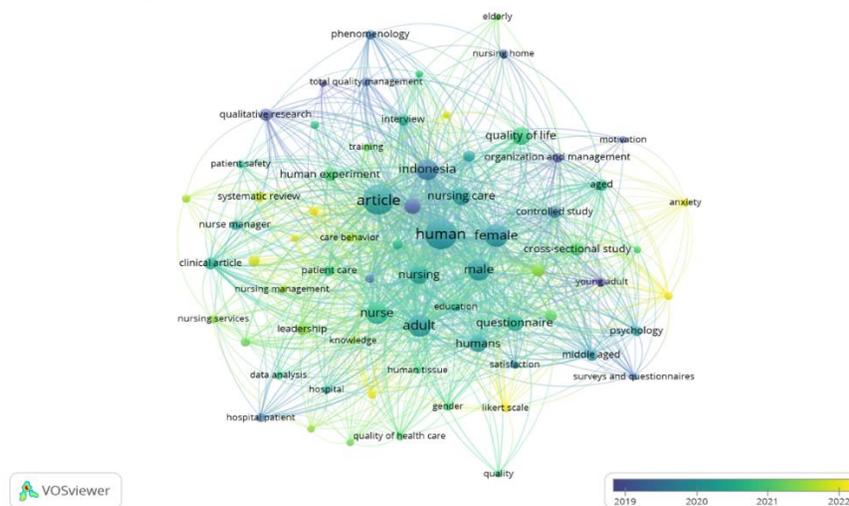


Figure 4. Keyword co-occurrence analysis.

Source(s): Authors' own work (2025)

In the early phase (2012–2015), represented by blue and green hues, the research emphasis was predominantly on structural and administrative dimensions of healthcare. Common themes included nursing administration, workforce attitudes, and organizational

management. For instance, Efendi et al. (2016) explored strategies to attract healthcare workers to remote areas, highlighting workforce distribution and policy interventions as key concerns. This foundational work underpinned later efforts to enhance hospital systems and leadership efficiency.

Moving into the mid-phase (2016–2018), shaded in green, the focus expanded to encompass quality-of-life measures, community-based care, and interprofessional collaboration. Studies such as those by Asmirajanti et al. (2018) evaluated the impact of clinical care pathways on interprofessional teamwork, indicating a shift toward patient-centered approaches. Similarly, See et al. (2018) addressed professional burnout in critical care environments, connecting individual well-being with broader system performance—an emerging theme linking organizational support to caregiver resilience.

The most recent phase (2019–2020), shown in yellow, signals a turn toward individualized care, professional mental health, and pandemic response. Keywords such as burnout, COVID-19, resilience, and emergency care appear more frequently. Barzallo et al. (2020), for example, conducted a cross-country study on health system performance and quality of life, signaling growing interest in comparative and global health perspectives. This aligns with broader international trends emphasizing psychological support, emergency preparedness, and professional sustainability (Pérez-Kakemam, 2021; Arechaederra et al., 2025).

Looking ahead, the data suggests a continued trajectory toward empathetic, resilience-oriented nursing practices. Recurring attention to stress, burnout, and interprofessional education, combined with emerging themes like infection control and remote service delivery, reflect the nursing field's adaptation to contemporary challenges. These insights not only underscore the human dimension of care but also highlight Indonesia's contribution to a global research agenda that increasingly values mental health, quality assurance, and adaptive system design.

Direction for Future Research

The density map illustrates in figure 6 highlight a maturing yet unevenly developed research landscape in nursing service quality. Several underexplored but promising research themes emerge that offer opportunities to expand the scope of NSQ domain, particularly in the Indonesian context. These themes are rooted in the patterns of keyword occurrence and density in the literature and are supported by recent academic studies included in the dataset. Themes such as gendered care experiences, mental health support, digital integration, ethical practice, and patient-centered evaluation hold significant potential for shaping a more holistic and responsive nursing research agenda. Addressing these areas through interdisciplinary, context-sensitive inquiry will not only expand academic understanding but also enhance the effectiveness and sustainability of nursing care in Indonesia and comparable global settings.

records, and AI-driven clinical support tools becomes critical. Studies such as that by Kusnanto et al. (2020) acknowledge gaps in IT-related training, especially in rural and resource-limited areas. Future research should focus on evaluating digital literacy levels, identifying barriers to technology acceptance, and exploring how digital tools can support nursing workflow, documentation, and decision-making.

Equally important is the theme of intercultural and ethical sensitivity in diverse patient populations. The inclusion of keywords like ethics, morality, and quality of life in the heatmap, though less densely situated, points to ongoing concerns about ethical nursing practices. However, only a few studies, including Setiawan et al. (2020) and Irawaty et al. (2021), have explored how nurses navigate ethical dilemmas in multicultural settings or in the context of limited resources. There is considerable potential to investigate how cultural values affect decision-making, end-of-life care, and patient communication. Integrating ethical literacy into nursing education and professional development, particularly with an intercultural lens, could help nurses deliver care that is both morally sound and culturally competent.

Lastly, patient-reported outcomes and person-centered metrics deserve greater academic attention. The map's concentration around terms like questionnaire, quality of life, satisfaction, and interview indicates frequent use of self-report tools in evaluating nursing care. However, most studies remain descriptive and lack robust conceptual frameworks. Research by Sari et al. (2021) and Putri et al. (2022) employs cross-sectional designs but does not fully capture the subjective, long-term experiences of patients. Future work could focus on developing and validating patient-reported outcome measures (PROMs) specific to Indonesian populations and healthcare settings. These tools would provide richer, more nuanced insights into care quality from the patient's perspective and support more responsive, person-centered healthcare planning.

4. Conclusions

This study has explored the thematic landscape of Nursing Service Quality (NSQ) research in Indonesia, identifying four major clusters of high-frequency keywords that represent the core areas of focus: nursing practice and patient care, quality of life and patient-centered outcomes, hospital management and healthcare systems, and emerging healthcare challenges and pandemic response. Each cluster captures critical components of the nursing profession, ranging from the operational and emotional demands on nursing staff, to organizational policy and leadership, and the increasing need for pandemic preparedness. Despite the thematic richness and the growing number of studies addressing these clusters (e.g., Suprpto et al., 2024; Abdurrouf et al., 2024; Suyatno et al., 2023; Wahyuningsih et al., 2020), the current body of literature remains uneven, with certain areas receiving less scholarly attention.

The key research issues identified from the keyword co-occurrence and bibliometric analysis point to several underdeveloped but highly relevant areas. First, gender-specific experiences in nursing have been underexplored, despite being crucial to understanding workforce dynamics and patient care interactions. Second, the psychological well-being and mental health literacy of nurses remain insufficiently addressed, especially in post-pandemic settings. Third, there is a notable lack of focus on digital literacy and technology integration in nursing, a gap that risks widening as healthcare systems become increasingly reliant on digital infrastructure. Fourth, the ethical challenges in multicultural care environments demand greater scholarly engagement, particularly in ethically complex or resource-limited settings. Lastly, while patient satisfaction and quality of life are frequently measured, there is a need for more nuanced

and culturally validated patient-reported outcome measures (PROMs) to guide care delivery in a patient-centered framework.

Implications of these findings are multifold. Academically, they highlight a need for more diversified, interdisciplinary research that integrates perspectives from psychology, informatics, gender studies, and ethics. For policy and practice, they underscore the urgency of equipping nurses with digital competencies, psychological resilience, and ethical frameworks, especially in light of increasing complexity in healthcare delivery. Furthermore, the development and application of culturally appropriate PROMs can greatly enhance the patient voice in evaluating care, thus aligning service delivery with actual needs and preferences.

However, several limitations must be acknowledged. The current analysis is largely based on co-occurrence of keywords, which, while informative, may not capture the full conceptual or theoretical depth of individual studies. Moreover, the focus on literature indexed in certain databases and in the Indonesian context may limit the generalizability of the findings to broader regional or global settings. There is also a reliance on quantitative bibliometric mapping, which may overlook the qualitative richness embedded in less frequently cited or emerging research contributions.

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