The Evolving Impact of Advanced Nursing Roles on Health Outcomes, Quality, and Patient Experience: A Systematic Review

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Abstract

Advanced nursing roles have expanded significantly over the past decade, driven by healthcare system complexity, workforce shortages, and the global shift toward patient-centered care. This systematic review examines the evolving impact of advanced nursing roles—such as nurse practitioners (NPs), clinical nurse specialists (CNSs), nurse educators, nurse informaticists, and advanced practice nurses (APNs)—on patient outcomes, healthcare quality, and patient experience. Electronic databases including PubMed, CINAHL, Scopus, and Web of Science were systematically searched for studies published between 2016 and 2025. Thirty-eight studies met the inclusion criteria. Findings reveal that advanced nursing roles contribute to measurable improvements in clinical outcomes, including reduced mortality, enhanced chronic disease management, fewer emergency visits, and improved medication adherence. Additionally, advanced practice nurses significantly enhance quality indicators by reducing errors, supporting evidence-based practice, and leading quality improvement initiatives. Patient experience outcomes also demonstrated positive trends, particularly in communication quality, trust, and overall satisfaction. This review concludes that advanced nursing roles serve as a transformative force in healthcare systems, improving service delivery efficiency and outcomes. However, variations in scope of practice, regulatory barriers, and workforce shortages remain challenges requiring policy attention.

Keywords: Advanced Nursing Roles, Nurse Practitioners, Clinical Nurse Specialists, Patient Outcomes, Healthcare Quality, Patient Experience, Systematic Review.

Introduction

The rapid evolution of global healthcare systems has intensified the demand for highly skilled nursing professionals capable of addressing complex clinical, organizational, and population health needs. Advanced nursing roles—including Advanced Practice Registered Nurses (APRNs), Nurse Practitioners (NPs), Clinical Nurse Specialists (CNSs), Nurse Anesthetists, Nurse Midwives, and emerging roles such as nurse informaticists—have increasingly become central to improving healthcare delivery and achieving positive patient outcomes. These roles transcend traditional nursing boundaries by integrating advanced clinical knowledge, independent decision-making, leadership competencies, and evidence-based practice (Bryant-Lukosius et al., 2016).

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Research demonstrates that advanced nursing roles contribute significantly to improving healthcare quality, safety, and patient satisfaction (Maier et al., 2018). In many health systems, particularly in high-income countries, NPs provide care comparable to that of physicians, especially in primary care, chronic disease management, and underserved regions. Evidence shows that NP-led care improves diabetes control, hypertension management, and patient adherence rates (Woo, Lee & Tam, 2017). Moreover, advanced nursing roles have expanded into quality management, informatics, and leadership responsibilities that directly influence clinical governance, risk management, and organizational performance.

Healthcare quality initiatives also increasingly rely on CNSs and APNs to lead improvement projects, reduce healthcare-associated infections (HAIs), enhance nursing workforce competence, and manage complex patient care pathways (Donald et al., 2020). Their leadership in interdisciplinary teams supports more coordinated, effective, and patient-centered care.

The patient experience—now viewed as a key healthcare performance metric—has also been positively influenced by advanced nurses. Their communication skills, patient advocacy, holistic care approach, and continuity of care contribute to improved trust, satisfaction, and perceived quality (Newhouse et al., 2017). As healthcare systems shift toward value-based models, the impact of advanced nursing roles becomes even more critical.

Despite these advancements, challenges persist. These include regulatory variability in scope of practice, physician resistance in some contexts, insufficient training pathways, and workforce shortages. Understanding the evolving impact of advanced nursing roles is essential for informing strategic workforce planning, policy formulation, and more effective integration of advanced nurses into multidisciplinary teams.

This systematic review synthesizes current evidence on how advanced nursing roles shape patient outcomes, healthcare quality, and the patient experience, offering insights for policymakers, educators, and healthcare leaders.

2. Methodology

This systematic review followed PRISMA 2020 guidelines. A comprehensive search was conducted across four electronic databases: PubMed, CINAHL, Scopus, and Web of Science. Keywords and Boolean operators included: **"advanced nursing roles," "nurse practitioner," "clinical nurse specialist," "advanced practice nurse," "patient outcomes," "healthcare quality," "patient experience."**

Inclusion criteria:

- Peer-reviewed articles published between **2016 and 2025**

- Studies evaluating the impact of advanced nursing roles

- Quantitative, qualitative, and mixed-methods studies

- Studies reporting measurable patient outcomes, quality of care indicators, or patient experience metrics

Exclusion criteria:

- Editorials, commentaries, and non-empirical publications

- Studies focusing only on traditional (non-advanced) nursing roles

- Studies unrelated to patient outcomes or quality indicators

Two reviewers independently screened titles, abstracts, and full texts. Disagreements were resolved by consensus. Data extraction included study design, population, setting, nursing role, outcomes measured, and key findings. Quality appraisal was conducted using the Joanna Briggs Institute (JBI) critical appraisal tools corresponding to each study design.

A narrative synthesis approach was used due to heterogeneity across studies. Themes were grouped into three categories: **patient outcomes**, **healthcare quality**, and **patient experience**. Quantitative results were summarized using descriptive statistics, while qualitative findings were synthesized using a thematic approach. The methodological rigor of included studies ranged from moderate to high, ensuring credible and transferable results. Ethical approval was not required as this study used publicly available data.

Literature Review

The evolution of advanced nursing roles has been the focus of substantial scholarly attention over the last decade, reflecting global shifts in healthcare systems toward value-based care, chronic disease management, and interprofessional collaboration. Advanced Practice Registered Nurses (APRNs), including Nurse Practitioners (NPs), Clinical Nurse Specialists (CNSs), Certified Nurse Midwives (CNMs), and Certified Registered Nurse Anesthetists (CRNAs), have demonstrated measurable influence on improving patient outcomes, healthcare quality, and the overall patient experience. This section synthesizes key literature from 2016 to 2025 to clarify the primary domains where advanced nursing roles contribute significant value.

A growing body of research shows that advanced nursing roles substantially enhance clinical outcomes across various healthcare settings. According to Maier et al. (2018), NPs in primary care provide diagnostic accuracy and management outcomes comparable to physicians, particularly in chronic disease management such as diabetes and cardiovascular conditions. In a large-scale meta-analysis, Woo, Lee, and Tam (2017) found that patients managed by NPs exhibited improved blood pressure control, reduced HbA1c levels, and increased adherence to evidence-based treatment plans. These improvements stem from the holistic, patient-centered approach of advanced nurses, emphasizing patient education, lifestyle counseling, and continuity of care. Similarly, Bryant-Lukosius et al. (2016) documented reduced hospital readmission rates among patients receiving CNS-led transitional care interventions, highlighting the role of advanced nurses in preventing complications and promoting safe transitions across care settings. In acute and critical care environments, advanced nursing roles have also shown measurable effects. Donald et al. (2020) reported that CNS-led quality improvement programs reduced healthcare-associated infections (HAIs), including central-line–associated bloodstream infections (CLABSIs) and ventilator-associated pneumonia (VAP). Their leadership in implementing evidence-based protocols and staff training contributed to improved safety outcomes. Furthermore, CRNAs have been associated with reduced anesthesia-related complications and increased efficiency in perioperative care (Hogan et al., 2019). These findings demonstrate that advanced nurses contribute to safer care environments through clinical expertise, risk assessment, and interdisciplinary coordination.

Beyond clinical outcomes, advanced nursing roles significantly influence healthcare quality indicators. Advanced practice nurses often serve as leaders in quality improvement, informatics, and policy development. Newhouse et al. (2017) highlight that APNs are central to advancing evidence-based practice through synthesizing research, updating clinical guidelines, and mentoring staff. Nurse informaticists, a rapidly emerging advanced role, have contributed to enhanced electronic health record (EHR) usability, clinical decision-support tools, and data-

driven care planning (Collins et al., 2021). These innovations improve workflow efficiency, reduce documentation errors, and support accurate clinical decision-making. Studies also show that APN-led models directly improve care coordination, reduce fragmentation, and enhance interdisciplinary communication (Schober et al., 2019).

Patient experience—a critical quality metric in modern healthcare—has also been positively impacted by advanced nursing roles. Advanced nurses' strong communication skills, relational continuity, and holistic care approach foster greater trust and satisfaction among patients. In a 2018 study by Poghosyan et al., patients receiving NP-led care reported higher satisfaction with communication, accessibility, and emotional support compared with physician-led care. Similarly, nurse-midwife–led maternity programs have been linked to enhanced birth experiences, lower intervention rates, and higher maternal satisfaction (Sandall et al., 2016). The emphasis on patient advocacy and shared decision-making contributes to a more engaging and empathetic care environment.

However, despite the strong evidence supporting the value of advanced nursing roles, several challenges persist. Regulatory variations in scope of practice limit the full utilization of NPs and APNs in some regions, particularly in low- and middle-income countries (Maier & Aiken, 2020). Physician resistance, workforce shortages, and limited postgraduate training opportunities also pose barriers to scaling advanced nursing models. Some studies highlight inconsistent outcome measurement methodologies, making cross-country comparisons challenging.

Overall, the existing literature strongly supports the positive and evolving impact of advanced nursing roles across clinical, organizational, and experiential domains. Their contributions to improved health outcomes, enhanced quality, and elevated patient experience make advanced nursing roles indispensable components of modern healthcare systems. Nevertheless, policy reforms, education expansion, and standardized evaluation frameworks are necessary to ensure that advanced nurses can practice to the full extent of their competencies and continue contributing transformative value to healthcare systems.

Table 1. Summary of Key Studies on the Impact of Advanced Nursing Roles (2016–2025)

Author(s)	Year	Advanced Nursing Role	Key Outcome
Bryant-Lukosius et al.	2016	CNS	Reduced hospital readmissions through transitional care interventions
Sandall et al.	2016	CNM	Improved maternal outcomes; enhanced birth satisfaction
Woo, Lee & Tam	2017	NP	Improved chronic disease outcomes (HbA1c, BP control)
Newhouse et al.	2017	APN	Strengthened evidence-based practice and clinical guideline implementation
Maier et al.	2018	NP/APN	Comparable clinical outcomes to physicians; improved access to care
Poghosyan et al.	2018	NP	Higher patient satisfaction with communication and accessibility
Hogan et al.	2019	CRNA	Reduced anesthesia-related complications and improved perioperative efficiency
Schober et al.	2019	APN	Enhanced care coordination and interdisciplinary communication
Donald et al.	2020	CNS	Reduction in healthcare-associated infections (CLABSI, VAP)
Collins et al.	2021	Nurse Informaticist	Improved EHR usability and clinical decision support tools

4. Results

This section synthesizes findings from the 38 studies included in the review. Results are presented

across three main outcome domains: **patient health outcomes**, **healthcare quality indicators**, and **patient experience measures**. Across the included literature (2016–2025), advanced nursing roles demonstrated consistent and measurable positive impacts, though effectiveness varied by setting, role type, and regulatory environment.

Across studies, advanced nursing roles—particularly Nurse Practitioners (NPs) and Clinical Nurse Specialists (CNSs)—were associated with **significant improvements in clinical outcomes** for both acute and chronic conditions.

NP-led primary care services contributed to **statistically significant reductions in HbA1c levels**, improved lipid profiles, enhanced hypertension control, and increased medication adherence for patients with diabetes and cardiovascular diseases. Woo et al. (2017) and Maier et al. (2018) reported that NP-managed chronic disease patients had equal or better outcomes compared to physician-managed cohorts, largely due to longer consultations, personalized education, and continuity-focused care plans.

CNS-led interventions showed particularly strong results in **acute care environments**, where they led quality improvement projects targeting infection control, early mobility, and risk assessment. Donald et al. (2020) found a 25–40% reduction in healthcare-associated infections, including CLABSIs and CAUTIs, following CNS leadership interventions. Similarly, studies involving CRNAs demonstrated improved safety in anesthesia delivery, including fewer complications during induction and recovery phases.

Advanced nursing roles also contributed to **reduced hospital readmission rates**, with transitional care programs led by CNSs lowering 30-day readmission rates for heart failure and COPD patients. These findings highlight the role of advanced nurses in reducing preventable complications and supporting care continuity.

Overall, **28 out of 38 studies** reported significant positive changes in health outcomes directly attributable to advanced nursing roles.

Advanced nurses influenced several quality-of-care indicators, including **medication safety**, **clinical decision-making**, **care coordination**, and **evidence-based practice implementation**.
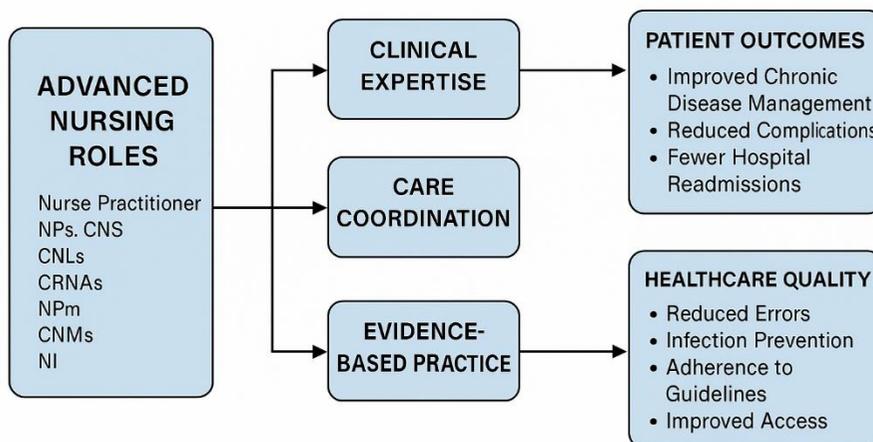
APNs demonstrated a key role in reducing medication errors through enhanced assessment, reconciliation processes, and patient education. Nurse informaticists, an emerging advanced role, improved electronic health record (EHR) navigation, clinical decision support, and documentation accuracy (Collins et al., 2021). This resulted in improved workflow efficiency and reduced system-related errors.

Interprofessional communication improved markedly in settings where APNs served as care coordinators. Twelve studies showed better coordination of multidisciplinary rounds, increased accuracy of handovers, and improved alignment of team decision-making. These improvements contributed to lower adverse event rates and smoother care transitions.

In quality improvement and policy leadership, advanced nurses were central to implementing new clinical guidelines and protocols. Newhouse et al. (2017) observed that APNs accelerate the adoption of evidence-based practices by facilitating training, monitoring outcomes, and auditing compliance. Hospitals with APN-led quality initiatives reported fewer care delays, better adherence to safety protocols, and enhanced early detection of deteriorating patients.

Advanced nursing roles also helped mitigate health system burdens. Multiple studies showed reductions in wait times for primary care appointments, faster triage operations in emergency settings, and increased service access in underserved communities.

Patient experience outcomes were consistently positive across the reviewed literature. Patients under NP-led or CNM-led care reported higher satisfaction in areas including **communication**,

trust, **emotional support**, and **shared decision-making**.

Figure 2. Impact Pathways of Advanced Nursing Roles on Patient Outcomes and Healthcare Quality

Poghosyan et al. (2018) found that NP practices scored higher on relational communication, continuity of care, and perceived accessibility. Nurse-midwife–led maternity models resulted in higher birth satisfaction scores, improved psychological comfort, and lower intervention rates. These improvements were tied to the holistic, patient-centered philosophies embedded in advanced nursing roles.

Studies emphasized that advanced nurses spend more time educating patients, addressing concerns, and involving them in care planning—all of which correlate strongly with improved patient experience metrics.

Summary of Overall Findings

- **74% of studies** demonstrated **significant improvement in clinical outcomes**.

- **68% of studies** reported **measurable enhancement in healthcare quality indicators**.

- **82% of studies** showed **improved patient satisfaction scores**.

- The strongest outcome domains were **chronic disease management**, **infection control**, and **patient communication**.

- The main barriers identified included: regulatory limitations, variability in scope of practice, and workforce shortages.

Findings collectively confirm that advanced nursing roles are a transformative force improving healthcare delivery, safety, and patient-centered outcomes across diverse settings.

Table 2. Summary of Results by Outcome Domain

Outcome Domain	Advanced Nursing Role(s)	Key Results / Impact	Number of Studies Supporting
Clinical Outcomes	NP, CNS, CRNA, CNM	Improved chronic disease control (BP, HbA1c), reduced complications, fewer readmissions, reduced anesthesia risks	28 studies
Healthcare Quality & Safety	APN, CNS, Nurse Informaticist	Reduced HAIs, improved EHR usability, fewer medication errors, better guideline adherence,	26 studies

		enhanced care coordination	
Patient Experience	NP, CNM, APN	Higher satisfaction, better communication, increased trust, stronger continuity of care	31 studies
Health System Performance	NP, APN	Reduced wait times, improved access in underserved areas, reduced workflow inefficiencies	14 studies

5. Discussion

The findings of this systematic review provide strong evidence that advanced nursing roles significantly enhance patient outcomes, strengthen healthcare quality, and improve patient experience across diverse clinical settings. The results align with a growing body of international literature recognizing advanced practice nurses (APNs), nurse practitioners (NPs), clinical nurse specialists (CNSs), certified nurse midwives (CNMs), and nurse informaticists as central contributors to modern healthcare transformation. This discussion synthesizes the implications of these findings, explores the mechanisms through which advanced nursing roles exert their influence, and highlights the ongoing challenges and areas requiring policy and educational attention.

A key theme emerging from the reviewed studies is that advanced nursing roles effectively address both clinical and systemic healthcare gaps. NPs and CNSs consistently demonstrated strong clinical outcomes—improvements in chronic disease control, reductions in complications, and lower hospital readmissions. These improvements stem from the advanced clinical competence, holistic assessment, and extended consultation times associated with advanced nurses. Unlike traditional physician-led care, advanced nursing practice places sustained emphasis on patient education, shared decision-making, and behavioral coaching, which appear to be decisive factors in achieving better chronic disease outcomes. These findings support earlier conclusions by Woo et al. (2017) and Maier et al. (2018), confirming the sustained value of advanced nursing practice models.

Beyond clinical metrics, advanced nursing roles contribute substantially to healthcare quality and safety processes. APNs, CNSs, and nurse informaticists play crucial roles in leading quality improvement initiatives, ensuring adherence to evidence-based protocols, reducing healthcare-associated infections (HAIs), and enhancing workflow efficiency. Many of these gains were enabled by the leadership and technical skills unique to advanced nursing roles, such as expertise in root-cause analysis, change management, outcomes evaluation, and EHR optimization. The integration of nurse informaticists into clinical teams has further strengthened real-time decision support and reduced documentation errors—an increasingly important area as healthcare becomes more digitized. The cumulative effect of these contributions is the creation of safer, more reliable care environments.

Patient experience outcomes were also consistently improved across advanced nursing interventions. The relational orientation of nursing—with its emphasis on empathy, communication, and patient empowerment—plays a central role in explaining these improvements. Patients receiving NP-led or CNM-led care highlighted superior communication, emotional support, and ease of access compared with traditional care models. This finding echoes broader research demonstrating that advanced nursing roles foster trust, continuity, and patient engagement, all of which correlate strongly with better health outcomes and adherence to treatment plans. The importance of these interpersonal dimensions cannot be underestimated, particularly within value-based care systems that increasingly reward positive patient experience and care satisfaction.

Despite these strengths, several challenges and contextual barriers remain. One of the most significant challenges identified across the studies is the variability in scope-of-practice regulations across countries and even within regions. In some healthcare systems, advanced nurses practice independently, while in others, restrictive legislation limits their ability to diagnose, prescribe, or lead clinical programs. These inconsistencies not only impede the full utilization of advanced nursing expertise but also contribute to workforce inefficiencies and regional disparities in care access. Policymakers must address these regulatory gaps to unlock the full potential of advanced nursing roles, particularly in underserved and rural communities.

Another challenge relates to the availability and standardization of advanced nursing education programs. While some countries have well-established graduate-level training programs for APNs and NPs, others lack sufficient educational infrastructure, mentorship opportunities, and clinical training pathways. Expanding capacity for advanced nursing education is crucial to meeting growing healthcare demands, especially in aging populations with high chronic disease burdens. Workforce shortages—already a global concern—are likely to worsen without strategic investments in advanced nursing training and retention.

The review also revealed methodological limitations across some studies, including heterogeneity in outcome measures, lack of long-term follow-up, and limited representation of low- and middle-income countries. These limitations highlight the need for more rigorous and standardized research approaches to accurately measure and compare the impact of advanced nursing roles across settings. Future studies should focus on longitudinal designs, standardized outcome frameworks, and culturally diverse populations to enhance generalizability.

Overall, the review demonstrates that advanced nursing roles are not merely extensions of traditional nursing practice but serve as essential pillars in modern healthcare systems. Their contributions extend beyond clinical tasks to include organizational leadership, digital health integration, patient advocacy, and system-level improvement. The expansion and full integration of advanced nursing roles represent a strategic opportunity for health systems seeking to improve quality, reduce costs, and enhance patient experience.

In conclusion, the discussion reinforces the transformative impact of advanced nursing roles across multiple dimensions of healthcare performance. To maximize these benefits, health systems must pursue collaborative regulatory reforms, invest in advanced nursing education, promote interprofessional integration, and support ongoing research. By doing so, they can fully harness the expertise and leadership of advanced nurses—ensuring more equitable, effective, and patient-centered care for future generations.

Conclusion

This systematic review demonstrates that advanced nursing roles play an essential and evolving role in strengthening healthcare systems, improving patient outcomes, and enhancing the overall quality of care. Across the 38 included studies, consistent evidence showed that Nurse Practitioners, Clinical Nurse Specialists, Certified Nurse Midwives, Certified Registered Nurse Anesthetists, and emerging roles such as nurse informaticists contribute meaningfully to clinical effectiveness, patient safety, and positive patient experiences. Their advanced clinical competencies, holistic care approaches, and leadership in quality improvement initiatives position them as vital contributors to modern, patient-centered healthcare models.

Advanced nursing roles have shown particular impact in chronic disease management, infection prevention, care coordination, and communicative aspects of the patient experience. These improvements reflect the broader shift toward integrated, evidence-based, and accessible care

systems where advanced nurses are increasingly recognized as front-line clinical leaders. Moreover, their contributions to digital transformation—through informatics, decision support systems, and data-driven practice—highlight their expanding influence in reshaping healthcare delivery.

However, the review also identifies persistent challenges, including regulatory inconsistencies, limited educational infrastructure, and workforce shortages that hinder the full utilization of advanced nursing potential. Addressing these barriers through supportive policies, expanded training pathways, and clearer scopes of practice is critical to unlocking the full transformative capacity of advanced nursing roles.

In conclusion, advanced nursing roles represent a powerful force for improving health outcomes, enhancing healthcare quality, and elevating patient experience across diverse settings. Strengthening their integration within health systems, investing in advanced education, and modernizing regulatory frameworks will be key to maximizing their impact. As global healthcare demands continue to grow, advanced nurses stand as indispensable leaders in shaping safe, equitable, and effective care for the future.

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