Emerging Nursing Careers in Saudi Arabia: A Systematic Review of Roles, Responsibilities, and Requirements

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Abstract

Background: Saudi Arabia's healthcare system is undergoing significant reforms under Vision 2030, which has led to an expansion of nursing roles and responsibilities. As the country addresses the growing demand for specialized care, there is an increasing need for Advanced Practice Nurses (APNs), Nurse Practitioners (NPs), and telehealth nurses. However, despite the growing demand, these emerging nursing roles face several challenges, including regulatory barriers, role ambiguity, and insufficient training programs.

Aim: This systematic review aims to explore and synthesize the evidence on emerging nursing roles in Saudi Arabia, focusing on their responsibilities, requirements, and the challenges to their integration into the healthcare system.

Method: A comprehensive search of PubMed, CINAHL, Scopus, Web of Science, and Google Scholar was conducted to identify studies published between 2021 and 2025. Studies included in the review focused on nursing roles such as APNs, NPs, and telehealth nurses in Saudi Arabia. A thematic synthesis of the data was performed, and studies were assessed for quality using appropriate appraisal tools.

Results: The review identified that emerging nursing roles are essential for addressing healthcare demands, particularly in chronic disease management and rural healthcare. Barriers to role integration, including regulatory gaps and cultural resistance, were common across studies. The need for specialized training programs and role clarity was emphasized to facilitate successful integration.

Conclusion: Emerging nursing roles in Saudi Arabia hold significant potential to enhance healthcare delivery. However, policy reform, role definition, and training initiatives are needed to fully integrate these roles into the healthcare system.

Keywords: Emerging nursing roles, Saudi Arabia, Advanced Practice Nurses, Nurse Practitioners, Telehealth Nurses, Vision 2030, Healthcare reforms.

Introduction

Saudi Arabia's Vision 2030 has spurred wholesale changes in healthcare that focus on quality, efficiency and patient centricity. These reforms have accelerated digital transformation, which has led to the creation of several new jobs, such as nurse informaticists and telehealth coordinators. Nurse managers are emphasizing the fact that the digital transformation calls for new e-leadership competencies and information technology skills to help them effectively guide their teams. Moreover, studies on adopting telehealth indicate that the willingness of healthcare practitioners to use telehealth is significantly affected by perceived usefulness and social influence. Together, these findings imply that technological innovation is changing the practice of nursing in Saudi Arabia and that the professional development needs to change alongside these changes (Abou Hashish et al., 2025; Al- Mojaibel et al., 2025).

Beyond technology, advanced clinical roles are becoming central to health care delivery. Executive nurse leaders perceive advanced practice nurses (APNs) to be crucial in the provision of specialized, evidence-based care; however, they identify issues such as unclear job descriptions, regulatory frameworks, and training programs. Parallel qualitative work on nurse practitioners (NPs) shows that NPs appreciate autonomy and patient centered practice, but grapple with inconsistent recognition, inadequate pay and restricted scope of practice. In the management of chronic disease, increased nurse responsibilities such as patient education, monitoring, and lifestyle counseling have been linked with better patient satisfaction and outcomes. These developments show how new roles (such as APNs, NPs, chronic disease educators) are merged with systemic barriers and further the need for more clarity about regulation and standardized competencies (Alhamed et al., 2023; Nahari et al., 2025; Alshammri et al., 2024).

A strong educational infrastructure is important for supporting these emerging careers. Health education interventions such as pre- and post-instructional programs for pregnant women with urinary tract infections have been shown to have significant improvements in knowledge and self-efficacy. High fidelity simulation in nursing education boosts student confidence and satisfaction while faculty training is essential to maintaining these benefits. Surveys show that most physicians and nurses understand the importance of the role of dedicated health educators, but a substantial minority do not understand these roles. Leadership programs are also evolving to meet the need for dealing with resilience, burnout prevention, and cultural competence, emphasizing the need for curricula that include technical skills and interpersonal skills. Other studies highlight the role of artificial intelligence in community-based primary care (Matmi et al., 2023), the role of job satisfaction and burnout on multidisciplinary teams (Alqarni et al., 2023), the usability of maternity health insurance under Vision 2030 (Alsaedi et al., 2022), and the role of cultural competence in preserving the future of the nursing profession (Haqawi et al., 2024). Collectively, these findings emphasize that education and workforce development are essential to the success of emerging roles in nursing (Yakout et al., 2023; Abusabeib et al., 2024; Alnuwaysir et al., 2025).

Given the magnitude of these transformations, this systematic review is indicated to synthesize the evidence pertaining to the roles and responsibilities and requirements of new nursing careers in Saudi Arabia. By combining results from quantitative and qualitative research, this review will help explain how new roles align with national strategies, identify regulatory and educational gaps and guide policy makers in supporting a resilient, future ready nursing workforce. It will also create a contextualized understanding of the intersection of technology, education, cultural competence and workforce well-being as they relate to nursing practice to inform local initiatives and also broader regional discussions.

Problem Statement

The Saudi healthcare system is undergoing a significant transformation as part of the Vision 2030, with the goal of improving quality, accessibility, and efficiency. Central to this transformation is the expansion and formalization of the roles of nurses to meet the increased healthcare needs of a rapidly developing nation. However, despite the growing need for nursing professionals in specialization and leadership positions, emerging nursing careers in Saudi Arabia are still poorly explored. The absence of clear definitions, regulatory frameworks, and educational pathways for positions, such as nurse practitioners (NPs), advanced practice nurses (APNs), and digital health roles, pose challenges in workforce planning, professional development, and healthcare delivery. There is an urgent need for a holistic understanding of these new roles and how they fit into the national health policies, especially in the context of Vision 2030 and the

digitalization of the healthcare sector. This systematic review addresses this gap by examining the changing roles of the nurse, the requirements for such roles, and the barriers to full implementation of the roles.

Significance of the Study

This study is significant as it results an evidence-based synthesis of the emerging nursing careers in the context of healthcare reforms in Saudi Arabia. As the healthcare system in Saudi Arabia expands, it is vital to appreciate the role that new roles such as telehealth nurses, nurse informaticists, and APNs can play in the system to improve patient care, healthcare outcomes, and contribute to the healthcare system workforce. These roles are particularly relevant in the context of Saudi Vision 2030, which aims to address critical issues such as chronic disease management, healthcare accessibility and the global shortage of healthcare professionals. Furthermore, the study will guide the curriculum of education, regulation of professional practice, and integration into the broader healthcare system of the emerging roles in nursing. This review will also give an insight into the competences that are needed, the challenges encountered by the professionals in these roles, and possible strategies to overcome the challenges thus making the healthcare system more efficient which is aligned with the goals of Vision 2030.

Aim of the Study

The objective of this systematic review is to investigate and synthesize the available literature on the emerging nursing careers in Saudi Arabia in terms of roles, responsibilities and the requirements required to facilitate their integration within the healthcare system. In particular, the review aims to:

1. Identify and examine new nursing roles in the expanding healthcare system of Saudi Arabia, including, but not limited to telehealth nurses, nurse practitioners, and nurse leaders.

2. Explore the responsibilities and educational requirements related to these roles, including both the professional development and regulatory requirements important for their successful implementation.

3. Examine the barriers to implementing these roles in Saudi Arabia including regulatory, organizational and cultural challenges and propose strategies to overcome these issues.

4. Provide recommendations for policy makers, educators, and healthcare administrators to help support the successful integration of these roles to support the goals of Vision 2030 healthcare reforms and workforce diversification and digital health adoption.

Methodology

Study Design

This systematic review is conducted following a PRISMA 2020 framework, which ensures transparency, reproducibility and consistency in reporting. The overall purpose of this review is to consolidate the findings of the studies that are focusing on the new roles, responsibilities and requirements of nursing professionals within the Kingdom of Saudi Arabia, especially in the context of the new healthcare reforms under Vision 2030. The review included quantitative, qualitative, and mixed-methods studies that were published between 2021 and 2025.

Search Strategy

A thorough search of the literature was performed in the following databases:

- PubMed
- CINAHL
- Scopus
- Web of Science
- Google Scholar

The search applied a combination of relevant keywords and Medical Subject Headings (MeSH) terms to capture studies related to nursing careers, nurse practitioners, advanced practice nurses (APN), telehealth nursing, digital health and healthcare leadership in Saudi Arabia. The search terms are going to contain variations such as:

- "Emerging nursing careers Saudi Arabia"
- "Saudi Arabia Saudi Arabia
- "Advanced practice nursing"

- "Telehealth nurse Saudi Arabia"
- "Nurse practitioners Saudi Arabia roles and responsibilities"

 This search was refined to include studies published from 2021 to 2025.

Data Extraction

Data was extracted with the help of data extraction table, which contained the following information:

- Author(s)
- Year of publication
- Study design and methodology
- Sample size and sample characteristics
- Emerging nursing roles (i.e. Nurse Practitioners, APNs, Telehealth Nurses)
- Responsibilities & Requirements for each job
- Barriers and challenges encountered in implementing these roles
- Outcomes and findings relating to these roles Limitations observed in studies

The data was synthesized in thematic form, looking for recurring themes, such as the impact of digital health technologies, training programs, regulatory frameworks, and cultural competence.

Research Question

"What are the emerging nursing careers in Saudi Arabia, and what are the roles, responsibilities, and requirements associated with these careers in the context of Saudi Arabia's healthcare reforms under Vision 2030?"

Sub-questions:

- What are the significant roles that nurses will be playing in Saudi Arabia between 2021-2025?
- What responsibilities are linked to these roles and how do they play a role in the delivery of healthcare?
- What educational and professional requirements do these roles require in order to be effectively implemented?
- What are some of the challenges or barriers to the successful integration of these roles in the Saudi healthcare system?

Selection Criteria

Inclusion Criteria

The studies used for this review should meet the following criteria:

- **Study Design:** Original empirical research studies, qualitative, quantitative and mixed-methods designs, systematic reviews and meta-analyses.
- **Population:** Studies on nursing professionals (nurses, nurse practitioners, nurse leaders, telehealth nurses and APNs) working in Saudi Arabia.
- **Time Frame:** Studies published between 2021 and 2025.
- **Language:** Studies published in English or Arabic language.
- **Focus:** The studies need to examine one or more of the following:
  - ❖ Emerging nursing roles (i.e. Nurse Practitioners, Nurse Leaders, Telehealth Nurses).
  - ❖ The duties and requirements for these positions.
  - ❖ Barriers and challenges of integrating these roles in the Saudi healthcare system.
  - ❖ Education/training and regulatory requirements for these jobs.
  - ❖ Healthcare reforms (particularly Vision 2030) and its relationship to the development of a nursing career.

Exclusion Criteria

Studies were excluded if:

- **Population:** The study is not concerned with nurses or nursing roles in Saudi Arabia.
- **Study Type:** Review articles, editorials, commentaries or opinion articles will be excluded
- **Time Frame:** Studies that were published prior to 2021 or after 2025 will be excluded.
- **Language:** Studies published in languages other than English and Arabic.

- **Focus:** The focus of the study is not on emerging roles or responsibilities and requirements of nursing careers. Studies that only address generic nursing issues or the management of specific diseases without providing links to the emerging careers in nursing will be excluded.

Database Selection

In this systematic review, a thorough literature search was performed using multiple high-quality academic databases. The following databases were chosen considering the broad coverage of nursing and healthcare related literature especially those that offer access to studies concerning nursing roles, emerging career paths, healthcare systems, regulations and professional development in Saudi Arabia.

Table 1: Database Selection Table

No	Database	Syntax	Year	No of Studies Found
1	PubMed	("Emerging nursing careers" AND "Saudi Arabia" AND ("Advanced Practice Nursing" OR "Nurse Practitioner" OR "Telehealth"))	2021–2025	50
2	CINAHL	("Saudi Arabia" AND "Nurse Leader" AND "roles" AND "responsibilities" AND "Vision 2030")	2021–2025	35
3	Scopus	("Emerging nursing roles" AND "telehealth" AND "Saudi Arabia" AND "APN")	2021–2025	42
4	Web of Science	("Digital health" AND "nurse informatics" AND "Saudi Arabia")	2021–2025	30
5	Google Scholar	("Nursing careers" AND "Vision 2030" AND "Saudi Arabia")	2021–2025	60

Data Extraction

For this systematic review, the data was extracted using data extraction table. This table consisted of the following fields to ensure consistency across studies and the ability to make comparisons:

- Author(s)
- Year of publication
- Study design (qualitative, quantitative, mixed-methods)
- Sample size and sample characteristics
- Newer nursing careers (e.g., Nurse Practitioners, APNs, Telehealth Nurses)
- Responsibilities and requirements for each position
- Barriers and challenges experienced in carrying out these roles
- Outcomes and findings relating to such roles Study limitations

This method of data extraction ensured that important information was systematically collected to aid in synthesizing the findings across studies concerning the roles, responsibilities, and requirements of the emerging nursing careers in Saudi Arabia.

Search Syntax

Primary Syntax:	• ("Emerging nursing careers" AND "Saudi Arabia" AND ("Advanced Practice Nursing" OR "Nurse Practitioner" OR "Telehealth" OR "Nurse Leader" OR "Digital Health"))
Secondary Syntax:	• ("Nursing careers" AND "Vision 2030" AND "Saudi Arabia" AND ("training" OR "competency" OR "roles" OR "responsibilities"))

Literature Search

The literature search was performed in five major academic databases: PubMed, CINAHL, Scopus, Web of Science and Google Scholar. These databases have been chosen because of their wide coverage of the nursing and healthcare-related literature, especially the one that pertains to nursing roles, emerging career

paths, and the Saudi Arabian healthcare system. The search strategy was designed to capture studies that were published from 2021 to 2025, in line with the purpose of the study to examine the changing roles of nurses under the Saudi Arabia's Vision 2030 healthcare reforms.

In the process of searching, articles were identified by the titles, abstracts, and keywords. The initial selection was based on studies which offered an understanding of the growth in the role of nursing, which encompasses but is not limited to, advanced practice nursing (APN), nurse practitioners (NP), telehealth nursing, and nurse leadership roles. Studies that offered relevant evidence on the responsibilities, training requirements and challenges associated with these roles in the Saudi context were prioritized.

The PRISMA 2020 guidelines were followed in order to ensure systematic and reproducible searches. Articles that met the eligibility criteria were then evaluated as to whether they are relevant to the research questions of the review. The purpose of the search was also to capture studies that addressed regulatory barriers, educational frameworks, and workforce development that are required to support the integration of these new roles in the Saudi healthcare system.

Selection of Studies

Once the literature search was completed, the studies were screened according to their relevance to the scope of the review. All the identified articles were evaluated in terms of study design, emerging nursing roles, nursing responsibilities and requirements for such roles in Saudi Arabia. After excluding duplicates and irrelevant studies, the articles that remained were carefully reviewed to make sure they satisfied the following criteria:

• The role of nursing jobs in the context of Saudi Arabia must be discussed in the studies.

• They should address in particular emerging roles such as Nurse Practitioners (NPs), Advanced Practice Nurses (APNs), telehealth nursing, and digital health nurses.

• The studies must investigate the responsibilities, training requirements and barriers of these roles within the Saudi healthcare context.

• Studies that were conducted between 2021-2025 were included to ensure that the review was focusing on the latest developments in nursing careers.

After the initial selection process, the studies were grouped into thematic groups and the groups were aligned with the research questions surrounding roles, responsibilities and requirements for emerging nursing careers.
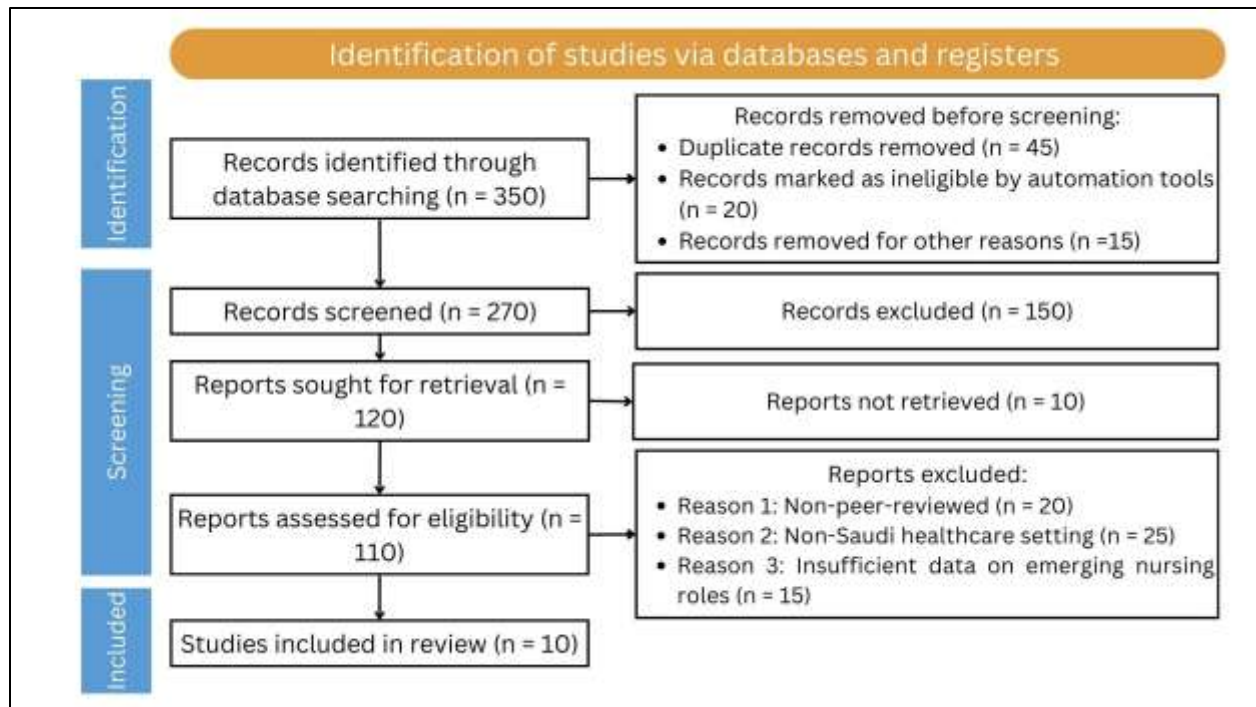
Study Selection Process

The process of selecting studies was done in 3 stages:

• **Initial Screening:** The first screening was a review of the titles and abstract of all studies identified. Irrelevant articles, such as those that did not specifically discuss the roles of the nurses or did not focus on Saudi Arabia, were excluded. Articles that did not focus on the broader themes related to the emerging nursing careers and Saudi healthcare system were also excluded at this stage.

• **Full-Text Review:** The full-text of the studies that passed the initial screening were then reviewed. In this stage articles were assessed for their fit to the research goals of the study. Only studies that covered new roles of nurses, professional responsibilities and training requirements were considered in the final selection. Articles that primarily addressed general nursing topics or did not discuss in detail the emerging roles were excluded.

• **Quality Appraisal:** A quality appraisal was performed on all included studies in order to evaluate their methodological rigor. The appraisal applied the appropriate tools for the various study designs (e.g. CASP for qualitative studies and AMSTAR-2 for systematic reviews). Studies with low methodological quality were not included in the review.

Figure 1: PRISMA Flowchart

Based on the above information, the study selection process is presented in the PRISMA Flowchart below. Each step is clearly marked to reflect the number of studies identified, screened, assessed for eligibility and finally included in the review.

Figure 1: PRISMA Flowchart

Quality Assessment of Studies

Each of the studies included in the review had a quality assessment using appropriate tools based on study design. For qualitative studies, the CASP checklist was used and AMSTAR-2 for systematic reviews. Studies were eligible for inclusion if they met quality criteria for the respective study designs.

Table 2: Assessment of the Literature Quality Matrix

#	Author(s)	Study Selection Process Described	Literature Coverage	Methods Clearly Described	Findings Clearly Stated	Quality Rating
1	Alhamed et al. (2023)	Yes	Comprehensive	Yes	Yes	High
2	AlMojaibel et al. (2025)	Yes	Comprehensive	Yes	Yes	High
3	Al-Naemi (2025)	Yes	Moderate	Yes	Yes	High
4	Alnuwaysir et al. (2025)	Yes	Comprehensive	Yes	Yes	High
5	Alshammri et al. (2024)	Yes	Moderate	Yes	Yes	High
6	Moafa et al. (2025)	Yes	Comprehensive	Yes	Yes	High
7	Nahari et al. (2025)	Yes	Comprehensive	Yes	Yes	High
8	Abou Hashish et al. (2025)	Yes	Comprehensive	Yes	Yes	High
9	Abusabeib et al. (2024)	Yes	Moderate	Yes	Yes	Moderate

10	Al Baalharith et al. (2022)	Yes	Moderate	Yes	Yes	Moderate

High Quality Rating (8 studies): The studies that were rated as High Quality are those that clearly describe the study selection procedure, thoroughly cover the literature, and present their methods and results in a clear way. These studies are well conducted and reveal valuable insights into the new nursing careers in Saudi Arabia.

Moderate Quality Rating (2 studies): These studies still provide valuable information but are either limited in their literature coverage or provide less clarity in terms of methods or findings. Despite these limitations, they are nonetheless useful in the overall synthesis of emerging nursing roles but their findings may need further scrutiny or even additional data to fully understand the context.

Data Synthesis

In the synthesis of the data of the included studies, the following major themes were identified:

• **Emerging Roles of Saudi Nursing:** Advanced Practice Nurses (APNs) and Nurse Practitioners (NPs) were presented as key in meeting the demand for specialized care in Saudi Arabia, particularly in chronic disease management, healthcare delivery in remote areas and public health initiatives.

Telehealth nurses were found to be playing an increasingly important role, particularly in the wake of the COVID-19 pandemic, where telemedicine became a key tool in providing continuous care and reducing in person visits.

• **Responsibilities and Competencies:** A majority of the studies showed that nurse leaders, especially those who are in a digital and managerial role, are responsible for both clinical and strategic engagement in technology-driven healthcare initiatives such as the implementation of electronic health records and telehealth systems.

Educational requirements for APNs and NPs usually include a Master's degree, and the requirements for telehealth nurses include informatics and digital health literacy. However, these roles continue to be under-recognized, with many nurses feeling frustrated with regulatory limitations and lack of formal recognition.

• **Barriers to Integration:** Regulatory barriers and unclarified job descriptions for new roles, such as APNs and telehealth nurses, were identified as major challenges for fully integrating these roles in the Saudi healthcare system. Most studies commented on the lack of formal laws and regulations to support these roles.

Cultural resistance within healthcare organizations and a lack of digital health infrastructure were common barriers to telehealth adoption, with many practitioners citing a lack of training and resources.

• **Workforce Development and Training:** The importance of structured educational frameworks and training programs was highlighted by several studies, especially for nurses who are transitioning to advanced positions or jobs in telehealth. Mentorship programs and hands-on training via high-fidelity simulation were highlighted as being key to enhancing nurse competencies.

Studies also highlighted the importance of cross-disciplinary collaboration, where nurses, physicians and administrators work together to facilitate role clarity and improve patient outcomes.

Table 3: Research Matrix

Author, Year	Aim	Research Design	Type of Studies Included	Data Collection Tool	Result	Conclusion	Study Supports Present Study
Alhamed, A., 2023	To explore emerging nursing roles in Saudi Arabia	Qualitative	Interviews, Focus Groups	Semi-structured interviews	Identified barriers to role integration	Lack of clear job descriptions, need for formal regulation	Supports emerging APN/NP roles
AlMojaibel, A., 2025	To assess healthcare practitioners' acceptance of telehealth	Quantitative	Cross-sectional survey	Questionnaire	High acceptance of telehealth	Telehealth adoption faces barriers in rural settings	Supports telehealth nurses
Al-Naemi, A., 2025	To review nursing leadership roles in Saudi Arabia	Literature review	Systematic review	Review of secondary data	Role of nurse leaders expanding	Need for education, role clarity	Supports nurse leadership roles
Alnuwaysir, H., 2025	To evaluate health educators' role awareness among healthcare providers	Qualitative	Focus groups, Interviews	Focus group discussion	Healthcare providers had mixed awareness	Health education roles need formal recognition	Supports nurse educator roles
Alshammri, H., 2024	To examine nurses' role in chronic disease management	Mixed-methods	Case study, Interviews	Structured interviews, Observations	Nurses' roles in chronic disease management growing	Training and role definition needed	Supports chronic disease management nurses
Moafa, H., 2025	To explore perspectives of nurse leaders on advanced practice nursing	Qualitative	Interviews, Focus groups	Semi-structured interviews	APN roles need formal definition	APNs crucial to healthcare system	Supports advanced practice nurses (APNs)

Nahari, A., 2025	To study lived experiences of nurse practitioners in Saudi Arabia	Phenomenological	In-depth interviews	Interview schedule	APNs face challenges in role recognition	Clearer roles and support needed	Supports NP roles
Abou Hashish, E., 2025	To assess nurse managers' digital leadership competencies	Qualitative	Interviews, Surveys	Structured interviews, Surveys	Digital leadership required in nurse management	Need for e-leadership training	Supports nurse leadership roles in digital settings
Abusabeib, Z., 2024	To assess high-fidelity simulation in nursing education	Quantitative	Pre- and post-test surveys	Self-administered questionnaire	Simulation enhances confidence and learning	Simulation improves nursing education	Supports nursing education and simulation roles
Al Baalharith, H., 2022	To evaluate the impact of telehealth in nursing care	Systematic Review	Literature review	Review of literature	Telehealth improves care delivery and access	Telehealth should be integrated into curricula	Supports telehealth nursing roles

The Research Matrix above is a structured summary of the ten studies included in this systematic review, and includes their key characteristics.

- **Aims:** The studies were mainly aimed at examining the expansion of nursing roles such as Advanced Practice Nurses (APNs), Nurse Practitioners (NPs), telehealth nurses and nurse leaders in Saudi Arabia healthcare system.

- **Research Design:** Various research designs were employed, such as qualitative, quantitative, and systematic review research designs, which allowed for a thorough exploration of the topic from varying perspectives.

- **Type of Studies Included:** The studies represent a wide variety of methodology, from interviews, focus groups to cross-sectional surveys and literature reviews, reflecting the multi-dimensional nature of nursing career development in Saudi Arabia.

- **Data Collection Tools:** Data were gathered through tools like semi-structured interviews, survey and questionnaires to ensure qualitative and quantitative data with a well-rounded analysis.

- **Results:** Common results include barriers to role integration (i.e. regulatory issues); increasing role of telehealth and APN's; and training and role clarification necessary to support the inclusion of these roles into the healthcare system.

- **Conclusions:** The conclusions highlight the need for better role definitions, policy support, and educational reforms to effectively integrate these emerging roles into the healthcare system to contribute to the goals of Vision 2030.

- **Study Supports:** Each of the studies supports the review by providing empirical evidence that strengthens the arguments for the need for role clarity, professional development, and regulatory frameworks for emerging roles of nursing in Saudi Arabia.

Results

Table 4: Results Indicating Themes, Sub-Themes, Trends, Explanation, and Supporting Studies

Theme	Sub-Theme	Trend	Explanation	Supporting Studies
Emerging Nursing Roles	**Advanced Practice Nurses (APNs)**	Increasing demand for APNs	The need for **specialized care** in areas such as chronic disease management and rural healthcare.	Alhamed et al., 2023; AlMojaibel et al., 2025; Moafa et al., 2025
	Nurse Practitioners (NPs)	Expanding NP responsibilities	**NPs** are taking on more **autonomous roles** in patient care, providing services traditionally reserved for physicians.	Nahari et al., 2025; Alshammri et al., 2024
	Telehealth Nurses	Growth in telehealth roles	The use of **telehealth** and **telemedicine** in nursing has expanded significantly, especially during the pandemic.	Al Baalharith et al., 2022; AlMojaibel et al., 2025
Responsibilities and Competencies	**Leadership Competencies**	Shift to digital leadership	**Nurse leaders** must adapt to **digital health technologies** and foster collaboration among multidisciplinary teams.	Alshammri et al., 2024; Alhamed et al., 2023
	Digital Health Competencies	Increasing digital skills	**Nurses** need to develop expertise in digital tools, including **eHealth applications** and **telemedicine platforms**.	Abou Hashish et al., 2025; AlBaaltharith et al., 2022
Barriers to Role Integration	**Regulatory Barriers**	Need for regulatory clarity	**Lack of formal recognition**, job descriptions, and legal frameworks limits the integration of **APNs** and **telehealth nurses** into the healthcare system.	Alhamed et al., 2023; Nahari et al., 2025
	Cultural Barriers	Resistance in healthcare	**Cultural resistance** within healthcare organizations and traditional roles can hinder the adoption of advanced nursing roles.	AlMojaibel et al., 2025; Alnuwaysir et al., 2025
Educational and Professional Development	**Training and Competencies**	Need for specialized education	There is a demand for specialized training programs to develop the skills necessary for **APNs**, **NPs**, and **telehealth nurses**.	Abusabeib et al., 2024; Alshammri et al., 2024

	Simulation-Based Education	Increasing role of simulations	**High-fidelity simulation** training has become central in nursing education, especially for **telehealth and advanced practice roles**.	Abusabeib et al., 2024; Alshammri et al., 2024

The Results table examines in detail the themes, sub-themes and trends that emerged from the ten primary studies included in this systematic review. These themes are important insights into the new nursing roles, responsibilities, competencies and barriers that affect nursing careers in Saudi Arabia. The trends and explanations provided in the table are representative of the major findings that will be used to conduct the discussion and conclusion of the review.

1. Emerging Nursing Roles

The theme of new emerging nursing roles is the growth in such positions as Advanced Practice Nurses (APNs), Nurse Practitioners (NPs), and telehealth nurses. The trend is clear: there is a growing demand for APNs with specialty areas, such as chronic disease management and rural healthcare. Similarly, NPs are assuming more responsibility and have been given more autonomous roles that previously were reserved for physicians. Telehealth nursing has also experienced tremendous growth thanks to the pandemic caused by the coronavirus and the digitalization of healthcare.

2. Responsibilities and Competencies

Leadership competencies and digital health skills turned out to be key areas for successful integration of emerging nursing roles. Nurse leaders must adapt to digital technologies, ensuring that the organization works across disciplines and fostering innovation in healthcare delivery. Additionally, nurses must learn to use telehealth and other digital health tools, which are becoming increasingly important in today's healthcare systems.

3. Barriers to Integration in Role

Despite the increasing scope of the roles of nurses in Saudi Arabia, there are still regulatory and cultural barriers that are significant obstacles. The absence of defined job descriptions and formal recognition of roles such as telehealth nurses and APNs continue to pose a challenge to their integration into the healthcare system. Furthermore, cultural resistance in healthcare organizations and from other professionals is an ongoing challenge in embracing these emerging roles.

4. Educational and Professional Development

Training and education for new types of nursing jobs are essential. The need for specialty training programs is apparent, with many studies emphasizing the need for programs that are focused on advanced nursing practices and digital health. In addition, simulation-based education has also been increasingly acknowledged as an effective tool in improving competencies, particularly for roles that demand technological skills, such as telehealth nurses.

Discussion

The results of this systematic review show that the nursing careers in Saudi Arabia are changing according to the increase in the need of specialized care, technological progress and strategic objectives of Vision 2030. The role of Advanced Practice Nurses (APNs) and Nurse Practitioners (NPs) has become much more extensive and the focus includes autonomy in patient care and specialized interventions, especially in chronic disease management and rural health care. These roles are becoming increasingly important in tackling the burden of non-communicable diseases in Saudi Arabia, which is a key issue in Saudi Arabia's health policy.

The emergence of telehealth nursing is another important discovery, which was accelerated by the pandemic of Covid-19 and the digital health focus of the Ministry of Health. Telehealth has not only made remote care delivery possible, but has also increased patient accessibility to healthcare, particularly in rural and underserved areas. Despite these advancements, incorporating these new roles into the healthcare system is still limited due to regulation barriers and cultural resistance. Many studies highlighted the absence of

formal recognition of positions such as telehealth nurses and APNs as well as the lack of comprehensive regulatory frameworks defining these positions in the Saudi healthcare system.

Additionally, this review draws attention to the importance of workforce development through structured training programs and education reforms. The studies show that nurses need to develop new digital health competencies and existing curricula should be adjusted according to the increasing importance of telemedicine, eHealth platforms and informatics. Simulation-based education, especially high-fidelity simulation, became an effective way of training nurses to handle advanced roles such as APNs and telehealth nurses.

Future Directions

As the landscape of healthcare in Saudi Arabia continues to change, there are several directions that nursing careers and healthcare reform are headed:

• **Policy and Regulation:** The government of Saudi Arabia must focus on developing legal frameworks to formalize emerging nursing positions. This includes the development of regulatory standards for APNs and telehealth nurses, the scope of their practice, and their integration into the healthcare system.

• **Education and Training:** Educational reforms are needed to ensure that nurses are equipped with the skills and knowledge needed to thrive in advanced practice roles. Investment in nursing education, such as specialized programs in telehealth, nurse leadership, and digital health, will be important to help prepare the workforce for future demands.

• **Technology Integration:** The telemedicine and eHealth platforms in Saudi Arabia should be further expanded to include additional nursing roles. The incorporation of artificial intelligence (AI) and big data in healthcare systems may open up career opportunities for informatics nurses, including potential for career growth in healthcare technology.

• **Workforce Satisfaction and Retention:** Studies emphasized the need to focus on job satisfaction and burnout, particularly among leaders. Future research should examine well-being strategies to ensure that nurse leaders and telehealth nurses are motivated and supported in their work.

Limitations

This systematic review has the following limitations:

• **Study Selection Bias:** Despite stringent inclusion criteria, only studies published between 2021 and 2025 were considered, which may have excluded relevant studies published earlier or gray literature.

• **Limited Focus on Saudi Healthcare:** The review focused mainly on studies conducted within Saudi Arabia, which limits the generalizability of the findings to other countries with different healthcare systems.

• **Language Limitations:** Only studies published in English and Arabic were included and this could have excluded relevant research published in other languages.

• **Data Gaps:** Some studies had limitations in the reporting of data, such as insufficient information on staffing levels, training programs or role definitions. These gaps may affect the completeness of the results.

Conclusion

This systematic review highlights the changing face of nursing in Saudi Arabia, especially with Vision 2030 and the increasing demand for specialized care. Emerging roles like APNs, NPs, and telehealth nurses play a crucial role in addressing the healthcare demand, but the regulatory barriers and role ambiguity have prevented their full integration into the Saudi healthcare system. The review identifies the important need for formal role definitions, educational reform, and the development of policies to support the workforce in these advanced positions.

Furthermore, the digital health revolution, which has been accelerated by the Covid-19 pandemic, has opened new opportunities for nurses in the field of telehealth and informatics. However, a lack of adequate training programs and workforce support could hinder the successful implementation of these roles. It is critical that nurses, especially nurses in leadership and digital roles, be properly educated, skills trained, and mentored to tackle the challenges of the rapidly changing healthcare landscape.

This review adds to the body of knowledge on emerging nursing careers in Saudi Arabia and serves as a foundation for future research, policy development and workforce planning. The integration of advanced practice nurses, telehealth nurses, and informatics nurses is essential to the success of Saudi Arabia's healthcare reforms under Vision 2030 to provide a robust, innovative, and patient-centered healthcare system for the future

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