



REVIEWS

Advanced Practice Nursing in Mexico: A Scoping Review and perspective for implementation

Enfermería de Práctica Avanzada en México: Revisión de alcance y perspectiva para su implementación

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ABSTRACT:

Objective: To analyze the scientific and normative evidence available on the conceptualization, domains, and competencies of Advanced Practice Nursing in the Mexican context.

Materials and methods: A scoping review was conducted following the PRISMA 2020 statement as a guideline for reporting the search and selection process. The research question was structured using the SPIDER format. Studies published in Spanish and English between January 2015, and June 2025 were included from PubMed, SciELO, BVS, national normative sources, and Google Scholar. Study selection was conducted independently by the researchers, and discrepancies were resolved by consensus.

Results: Forty-three studies were included, 67.4% conducted in Mexico. The conceptualization of APN was heterogeneous: 27.9% closely matched the International Council of Nurses (ICN) definition, 41.9% partially, and 30.2% recovered only fragmented elements. The most frequent domains were research, care management, interprofessional collaboration, and clinical quality/safety (>88%), while cultural competence and advocacy were rarely addressed (<30%). Only 44.2% of the documents included a master's degree as a requirement. PHC appeared only marginally as a central conceptual axis of APN.

Conclusions: The conceptualization of APN in Mexico is diverse and fragmented. These findings enabled the proposal of a context-adapted definition as an academic contribution to strengthen the understanding of the role and provide evidence to guide its design, regulation, and implementation with an emphasis on Primary Health Care.

Keywords: Advanced Practice Nursing; nurse practitioners; scoping review.

RESUMEN:

Objetivo: Analizar la evidencia científica y normativa disponible sobre la conceptualización, dominios y competencias de la Enfermería de Práctica Avanzada en el contexto mexicano.

Material y métodos: Se realizó una revisión panorámica siguiendo la declaración PRISMA 2020, como guía para el reporte del proceso de búsqueda y selección. La pregunta se estructuró mediante el formato SPIDER. Se incluyeron estudios en español e inglés publicados entre enero de 2015 y junio de 2025 en PubMed, SciELO, BVS, fuentes normativas naciones y Google Académico. La selección de estudios se realizó de forma independiente por las investigadoras e investigadores y las discrepancias se resolvieron en consenso.

Resultados: Se incluyeron 43 estudios, 67.4% realizados en México. La conceptualización de la EPA fue heterogénea: 27.9% coincidió fielmente con la definición del CIE, 41.9% de manera parcial y 30.2% solo recuperó elementos fragmentados. Los dominios más frecuentes fueron investigación, gestión del cuidado, colaboración interprofesional y calidad/seguridad clínica (>88%), mientras que la competencia cultural y la defensa de derechos fueron poco abordadas (<30%). Solo 44.2% de los documentos mencionó explícitamente el nivel de maestría como requisito. La APS apareció incorporada de forma limitada como eje conceptual de la EPA.

Conclusiones: La conceptualización de la EPA en México es diversa y fragmentada. Los hallazgos permitieron proponer una definición adaptada al contexto nacional como aporte académico para fortalecer la comprensión del rol y generar evidencia que oriente su diseño, regulación e implementación con énfasis en la Atención Primaria de Salud.

Palabras claves: Enfermería de Práctica Avanzada; Enfermeras Practicantes; Revisión de alcance.

INTRODUCTION

In recent decades, Advanced Practice Nursing (APN) has gained international recognition as a key strategy for strengthening health systems, owing to its role in complex clinical decision-making, leadership in care management, and the expansion of access to essential services^(1,2,3). While this model is well established in Anglo-Saxon countries, its implementation in Latin America faces the challenge of adapting to contexts with marked health inequities and heterogeneous regulatory frameworks^(4,5,6).

Mexico has not yet defined APN typologies within its regulatory framework, in contrast to countries such as the United States and Canada, where categories—such as Nurse Practitioner (NP) and Clinical Nurse Specialist (CNS)—are formally codified in statutory schemes^(7,8). APN development has therefore depended largely on postgraduate programs emphasizing advanced clinical practice competencies, as well as on emerging institutional experiences in hospital and community settings. The absence of regulated categories underlies the diversity and, at times, contradictory conceptualizations of the role.

At the regional level, Mexico stands out for its progress in APN academic training, with two master's programs that represent a turning point in the institutionalization of the role: one developed by the Metropolitan Autonomous University, Xochimilco Unit (UAM-X) in 2021, and the other launched by the University of Sonora (UNISon) in 2023^(9,10). Postgraduate training is essential for the acquisition of advanced clinical competencies, critical thinking, and an understanding of health systems grounded in reflective practice-oriented and situated theoretical frameworks. This preparation enables professionals to engage with vulnerable populations, transform traditional models of care, and address the health–disease–care process from non-reductionist perspectives.

Parallel to these efforts, several institutions in Mexico have begun to incorporate APN models into healthcare settings across the country, including initiatives such as the Advanced Practice Nursing Center at Dr. Manuel Gea González General Hospital. ⁽¹¹⁾ Nonetheless, these developments are constrained by a fragmented understanding of the role, alongside multiple interpretations of its clinical, educational, research, and management scope. Within the national context, the most widely cited definition is that proposed by the International Council of Nurses (ICN) and the World Health Organization (WHO), which characterizes APN as master's-prepared practitioners with advanced clinical competencies and autonomy in complex decision-making^(12,13). Given its breadth, however, this definition offers limited operational guidance for implementation within regulatory, educational, and healthcare frameworks.

Moreover, the ICN definition fails to address the relationship between APN and Primary Health Care (PHC), essential for consolidating its role in Mexico. PHC is understood as a comprehensive approach that organizes health systems to respond equitably to the needs of individuals and communities. It does so by integrating health promotion, disease prevention, clinical care, and social participation across the continuum of care, while articulating a vision that moves beyond the operational notion of first-level care.

On this basis, PHC constitutes a strategic platform for the deployment of advanced practice, as it enables the articulation of person-centered interventions and a comprehensive response to health problems shaped by complex social determinants⁽¹⁴⁾. Several international reports indicate that APN competencies in clinical assessment, care management, leadership, health promotion, and decision-making render it a key resource for reducing inequities, enhancing service effectiveness, and strengthening the sustainability of health systems. ^(15,16) Yet, despite extensive evidence demonstrating its benefits, health professionals nationwide have historically shown limited understanding of the PHC approach⁽¹⁷⁾.

While studies have addressed partial components of APN in Mexico from academic, professional, and institutional perspectives, a comprehensive synthesis of the available evidence has yet to be developed. Such an effort would make it possible to understand the ways in which this role has been defined, interpreted, and applied in the national context, as well as its articulation with PHC. ^(10,18-22) Accordingly, this review aimed to analyze findings from the scientific and regulatory literature on the conceptualization, domains, and competencies of APN in Mexico, with the goal of establishing a conceptual foundation for its development, implementation, and regulation.

MATERIAL AND METHODS

Design

A scoping review was conducted to map the conceptualization, domains, and competencies attributed to APN in Mexico. To ensure transparency and comprehensive coverage, the processes of evidence identification, selection, and synthesis were reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines⁽²³⁾. Given the exploratory nature of the study, the Sample, Phenomenon of Interest, Design, Evaluation, and Research Type (SPIDER) framework was applied⁽²⁴⁾, enabling a clear structuring of the research question and facilitating the inclusion of relevant academic, regulatory, and theoretical literature on

this emerging phenomenon. Accordingly, The guiding research question was: What evidence is available in the scientific and regulatory literature regarding the conceptualization, domains, and competencies of APN in Mexico?

Eligibility criteria

A double filter of inclusion and exclusion criteria was applied to strengthen the article selection process. Inclusion criteria comprised scientific articles published within the last ten years (2015–2025), available in Spanish or English, and addressing APN in Mexico. In addition, the review considered normative and institutional documents examining the conceptualization, training, domains, competencies, regulation, and implementation of APN in Mexico. Eligible sources encompassed qualitative, quantitative, and mixed-methods studies, as well as document analyses, editorials, opinion and reflection articles, thematic discussions, narrative reviews, recommendations for APN competencies and academic training and technical reports.

Exclusion criteria were not defined as the inverse of the inclusion criteria but were instead formulated to ensure the conceptual and contextual relevance of the documentary corpus. Therefore, texts lacking an explicit focus on Mexico, documents addressing only general nursing practice, publications issued prior to 2015, duplicate records, and non-academic or non-normative materials (e.g., newspaper articles) were excluded.

The search period was delimited from 2015 onward, marking the point at which the first strategic documents in Mexico and Latin America formally incorporated the concept of advanced practice within broader efforts to strengthen PHC and achieve universal health coverage.

Additionally, this period both precedes and coincides with the creation, in 2018, of an inter-institutional group established to promote advanced practice in Mexico. This group comprises the Pan American Health Organization (PAHO); the Ministry of Health, through the National Center for Preventive Programs and Disease Control (*CENAPRECE*), and the General Directorate of Quality and Education in Health (*DGCES*); the Metropolitan Autonomous University, Xochimilco Unit (*UAM-X*); and the National Autonomous University of Mexico (*UNAM*). Consequently, this time frame made it possible to capture the body of literature addressing the emergence and development of the role in the national context.

Information sources and search strategies

The literature search was carried out in June 2025 using the PubMed, Scientific Electronic Library Online (SciELO), and Virtual Health Library (VHL) databases. In addition, regulatory and institutional sources were consulted, including documents from the Ministry of Health, DGCES, PAHO/WHO, ICN, and university repositories such as the digital libraries of the Metropolitan Autonomous University (*BIDIUAM*) and the National Autonomous University of Mexico (*BIDIUNAM*). Google Scholar was also used to identify relevant gray literature.

The search strategy employed the Boolean operators AND and OR, combining controlled vocabulary and free-text terms. Search strings included, for example,

("Advanced Practice Nursing" AND "Mexico") and ("Nursing" AND "Advanced Practice" AND "Mexico"). The complete search strings and terms used for each database are presented in Table 1.

Table 1. Literature search strategy: results and search strings, Mexico, 2025

Database	Results*	Search strings
Virtual Health Library (VHL)	16	("Enfermería de Práctica Avanzada") AND ("México")
PubMed	72	"Advanced Practice Nursing"[All Fields] AND "Mexico"[All Fields]
Scientific Electronic Library Online (SciELO)	1	"Enfermería de Práctica Avanzada" AND "Mexico"
Digital resources UAM- Xochimilco	2	Enfermería de Práctica Avanzada Mexico
Digital resources UNAM	3	Enfermería de Práctica Avanzada Mexico
Google Scholar	110	"Enfermería de Práctica Avanzada" "Mexico"
DGCES, Ministry of Health	1	"Enfermería de Práctica Avanzada" site:gob.mx

*The results correspond to the records identified prior to data cleaning and the removal of duplicates.

Note: search strategies were conducted in both English and Spanish, depending on the indexing language of each database.

Source: authors' own elaboration based on the included studies.

Data extraction and synthesis

The review process was carried out in two phases. In the first, a comprehensive literature search was conducted across the previously mentioned databases and articles were screened based on their titles and abstracts. For articles deemed eligible and relevant, the full texts were analyzed in a second phase to determine whether they met the preestablished inclusion criteria.

A standardized form was designed to capture the following information: document type, year, scope, APN definition, mention of training requirements, and the presence or absence of predefined domains (i.e., research and evidence-based practice, clinical leadership and consultancy, mentorship, interprofessional collaboration and relationships, expert clinical judgment, educational leadership, quality management and clinical safety, care management, autonomy for professional practice, health promotion, cultural competence, protection and advocacy of patient rights, and academic training-master's degree). The research team conducted both the search and the analysis of the data sources. Disagreements regarding eligibility were resolved by consensus.

For the analysis, domains were distinguished from competencies. The ICN and various international consensus frameworks define domains as broad performance categories, and competencies as observable behaviors, skills, and specific knowledge expressed within each domain. This distinction facilitated the organization of heterogeneous documents. The ICN framework was used as a reference to identify convergences, divergences, and gaps in the conceptualization of APN in Mexico.

RESULTS

The search for scientific evidence yielded a total of 205 articles. After applying the inclusion criteria, 43 documents remained, as shown in Figure 1 of the PRISMA flowchart. Although PHC was not an inclusion criterion, its presence in the analyzed documents was recorded when explicitly stated, given its relevance to APN implementation in Mexico.

Table 2 shows that of the remaining 43 studies, the majority (29, or 67.4%) were conducted in Mexico, and 8 (18.6%) in the Americas and Caribbean region, while the other 14.0% were distributed among countries such as Spain, the United Kingdom, Pakistan, Turkey, and Cameroon. The latter were included in the review because they incorporated specific aspects relevant to the Mexican context. Most were descriptive observational studies (30.4%), followed by reflective, analytical, opinion, or editorial articles (20.9%), as well as systematic, narrative, or literature reviews (20.9%), essays (11.6%), project or strategy proposals (9.3%), normative or institutional documents (4.6%), and mixed-methods studies (2.3%).

Figure 1: PRISMA 2020 flowchart for systematic reviews that included searches of databases, registries and other sources

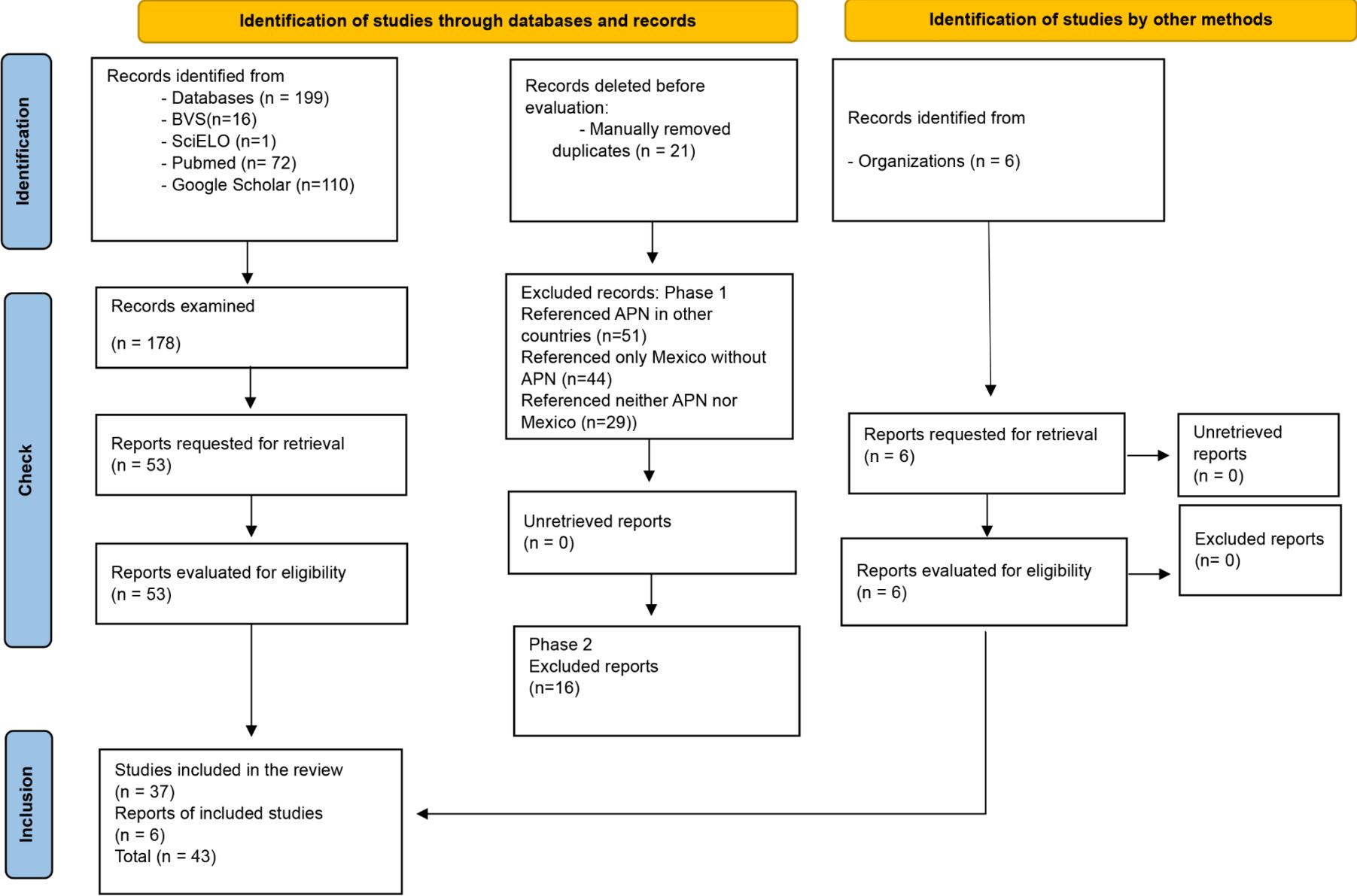


Table 2. Characteristics of the 43 studies included in the review, Mexico, 2025

Primary Author	Title	Focus region	Year	Methodology and/or method	Objective
Alarcón-Muñiz, Enrique-Chacón y Acosta Castañeda	Advanced Practice Nursing in Neonatal Intensive Care Units using the Bedside Nurse model	Mexico	2020	Reflection article	To develop APN in neonatal intensive care units through the implementation of the Bedside Nurse model created by Marie Manthey.
Alcántara Ruiz	Coronavirus 2020: Nursing Situation in Mexico	Mexico	2021	Essay	To analyze the educational, labor and conditions of nursing in Mexico at the onset of the COVID-19 pandemic.
Alonso Ricardez et al.	Areas of opportunity and the role of the researcher in Nursing	Mexico	2018	Essay	To reflect on the significance of the researcher role in nursing, and to identify areas of opportunity for nursing students and professional nursing staff.
Álvarez Albino, Siguenza Sánchez y Rivas Espinosa	Nursing consultation for the development of self-care skills: a university proposal	Mexico	2020	Project proposal	To provide consultative nursing care to individuals—whether healthy or ill—across the life course, in order to support the maintenance and development of self-care capacities that enable them to manage their health from a first-contact-level perspective.
Álvarez-Ramos et al.	Nursing and advanced practice in the intensive care and coronary unit of a central military hospital: feasibility analysis	Mexico	2015	Cross-sectional survey with instrument validation	To assess the feasibility of implementing an APN approach in an adult coronary intensive care unit with the goal of enhancing the effectiveness of specialized procedures.
Aranda-Ibarra et al.	Care in Advanced Practice Nursing	Mexico	2019	Document Analysis	To examine the close relationship between the philosophy of care and APN.
Bautista-Cabañas et al.	Advanced Practice Nursing in the Health System: evolution,	Mexico	2023	Systematic Review	To assess the performance of APN in the health sector.

Primary Author	Title	Focus region	Year	Methodology and/or method	Objective
	acceptance and recognition				
Bortoli Cassiani et al.	Competencies for training advanced practice nurses in Primary Health Care	Latin America and the Caribbean	2018	Descriptive quantitative study with qualitative data analysis	To identify a set of core competencies for the training of APN professionals in PHC across Latin America and the Caribbean.
Bryant-Lukosius et al.	Advanced Practice Nursing: a strategy to achieve universal health coverage and universal access to health	Latin America and the Caribbean	2017	Document analysis	To examine the role of APN internationally, with a view to informing its development in Latin America and the Caribbean and supporting universal health coverage as well as access to health care.
Casales-Hernández	Implementation of an educational intervention focusing on expanded nursing roles to improve the job skills of professionals in the care of diabetes mellitus	Mexico	2024	Descriptive cross-sectional design and a non-randomized field trial	To design and implement an educational intervention on expanded nursing roles for diabetes mellitus care and compare outcomes with those of usual care.
Cuellar, et al.	Identification of Advanced Practice Nursing competencies among professionals at specialized care clinics	Mexico	2023	Observational, descriptive, cross-sectional, prospective study	To identify APN competencies among professionals in specialized care clinics.
Cuevas Budhar	Competency profile of Advanced Practice Nurses in the field of Nephrology in Mexico and Spain	Mexico and Spain	2024	Mixed methodology	To design and adapt a competency profile for APN practitioners in nephrology throughout Mexico and Spain.
De Bortoli et al.	Regulation of nursing practice in the Region of the Americas	Region of the Americas	2020	Exploratory Descriptive	To describe and analyze current nursing regulations across the countries of the region.

Primary Author	Title	Focus region	Year	Methodology and/or method	Objective
De La Cruz Martínez, Villegas-Pantoja y Fuentes Ocampo	Concept analysis: Advanced Practice Nursing in the prevention of addictions among adolescents	Mexico	2025	Qualitative study	To analyze the definition of APN in addiction prevention, with the aim of both understanding the nursing role as a strategy for preventing substance abuse among adolescents and highlighting the need for its practice in the social context.
Dos Santos Bezerril et al.	Advanced practice nursing in Latin America and the Caribbean: context analysis	Latin America and the Caribbean	2018	Context analysis carried out in October 2017 using scoping review	To describe the factors influencing APN implementation in Latin American and Caribbean countries.
Gaona Rivera	Advanced Practice Nursing Consultation for the Development of Self-Care Capabilities	Mexico	2021	Project proposal	To provide APN consultancy to individuals—whether healthy or ill—across the life course, promoting self-care skills for effective health management within a first-clinical-contact framework.
García-Acosta et al.	Best Nursing Practice: Safe and Inclusive Healthcare Environments for Transgender People: A Systematic Review	International	2024	Systematic review	To review the scope of scientific literature on creating safe and inclusive healthcare environments for transgender people and to describe the nursing resources and competencies necessary to achieve these environments.
Hernández-Sánchez et al.	Recommendations for the training of Advanced Practice Nursing professionals in Mexico	Mexico	2023	Proposed recommendations for academic training	To analyze the current landscape of APN in Mexico and propose recommendations for postgraduate professional training.
Honig, Doyl e-Lindrud y Dohrn	Moving towards universal health coverage: Advanced Practice	Latin American countries	2019	Proposed competencies	To identify a set of APN competencies that could serve as a framework for establishing standardized APN core competencies

Primary Author	Title	Focus region	Year	Methodology and/or method	Objective
	Nurse competencies				across Latin America and the Caribbean.
Lee et al.	Advanced Practice Nursing Roles: A Comparison Between Mexico and the United Kingdom	Mexico and the United Kingdom	2022	Comparative analysis	To compare the APN frameworks in Mexico and the United Kingdom.
Leija-Hernández et al.	Comprehensive Strategy for Expanding the Role of Nursing in Primary Health Care	Mexico	2020	Report; based on systematic review and semi-structured interviews	To explain the Comprehensive Strategy for Expanding the Role of Nursing as a basis for designing human resource training policies and incorporating this new role into the Mexican public health system.
Lobo Cordero	Stoma therapy in Mexico	Mexico	2022	Editorial	To describe the history, current practice, and professional perspectives of stoma therapy in Mexico, including the level of autonomy among stoma therapists.
Manuel-Martinez	Advanced Practice Nursing interventions in the application of extracorporeal renal replacement therapies	Mexico	2020	Literature review	To identify APN interventions in nephrology during the administration of extracorporeal renal replacement therapies.
Medrano-Mariscal	Approaching the descriptor Evidence-Based Nursing from a complex perspective	Mexico	2016	Essay	To analyze the Health Sciences Descriptors (DeCS) through the lens of the complexity paradigm.
Mendoza-Seme	Nursing care management at the secondary level of care	Region of the Americas	2023	Documentary–bibliographic review	To describe how nursing care is managed at the secondary level of healthcare
Naegle, Baumann y Denwood	A commentary on the Pan American Network of Nursing and Midwifery Collaborating Centres	Region of the Americas	2023	Special Report	To present a perspective regarding the Pan American Network of Collaborating Centers for Nursing and Midwifery.

Primary Author	Title	Focus region	Year	Methodology and/or method	Objective
Nigenda López y Aristizábal Hoyos	The silent leadership of nursing in Mexico: reflections on its transformation	Mexico	2020	Essay	To argue that nursing leadership in Mexico holds significant potential for development but remains largely silent.
Nigenda-López	Challenges in the training of human resources in health	Mexico	2024	Literature review	To analyze the challenges and complexities of managing Human Resources for Health in Mexico.
Peña-Núñez	Methods of narrating nursing notes according to the legal basis, at the Toluca ISSEMyM Regional Hospital from May to August 2021	Mexico	2021	Qualitative and observational-descriptive study	To analyze methods of narrating nursing notes in accordance with the legal framework.
Peralta-Peña y Escobar-Castellanos	Master's Degree in Advanced Practice Nursing for Northwest Mexico from the University of Sonora	Mexico	2023	Editorial	To contextualize and justify the creation of the Master's Degree in APN at the University of Sonora as a training strategy aligned with international trends and the needs of the Mexican health system.
Pérez Delgado, Padilla Zarate y Pérez Mendoza	Evolution of the Nursing Care Model for quality and safe care	Mexico	2024	Original article	To describe the evolution of the Nursing Care Model (NCM) at Dr. Eduardo Liceaga General Hospital of Mexico.
Ponce Gómez et al.	Telecare and home care for older adults with COVID-19: the case of nursing specialists	Mexico	2024	Quantitative, descriptive, longitudinal	To describe the situation of older adults with COVID-19 receiving telecare and home care from nursing specialists and multidisciplinary health teams.
Ramírez-Cortés	Experiences of family caregivers of older adults with chronic illnesses	Mexico	2021	Exploratory qualitative: case study	To describe caregiving experiences among family members assisting older adults with Alzheimer's disease vs. professional care provided by advanced

Primary Author	Title	Focus region	Year	Methodology and/or method	Objective
					beginner and experienced nurses in expanded roles.
Ramírez Sánchez et al.	The Science of Caring: A Vision of Nursing Needs	Mexico	2024	Opinion article	To reflect on the needs of the nursing profession.
Ramos	Successful interventions in the prevention of diabetic foot as an advanced practice in nursing	Mexico	2022	Literature search	To identify the best available evidence on diabetic foot prevention within the scope of APN.
Reyes Audiffred y Leitón-Espinoza	Interprofessional collaboration: Nursing moving towards teamwork in the care of older adults	Mexico	2023	Descriptive -qualitative study	To explore the experiences of nurses with expanded roles in interprofessional collaborative practice.
Rodríguez-Duarte, Cruz-Ortiz y Pérez-Rodríguez	From intensive care to critical care: a name change that reflects evolution	Mexico	2020	Narrative review	To examine the transition from intensive to critical care and its implications for nursing practice.
Rojas Torres y Gil Herrera	Primary Health Care strategies in five Latin American countries	Argentina, Chile, Colombia, Cuba and Mexico	2021	Literature review	To describe strategies in first-contact clinical care across five Latin American countries.
DGCES, Ministry of Health	Comprehensive Strategy for Expanding the Role of Nursing in Primary Health Care	Mexico	2018	Strategy report	To establish the competencies and standards for APN as a component of human-resource-training policy and to support the incorporation of this role into the Mexican Health System.
Sarmiento Luna y Álvarez Aguirre	Advanced Practice Nursing: Implementation in Mexico and its Contribution to Primary Health Care	Mexico	2025	Essay	To analyze the recent implementation of APN in Mexico and its contribution to PHC.

Primary Author	Title	Focus region	Year	Methodology and/or method	Objective
Semerci et al.	Advanced Practice Pediatric Oncology Nursing as Imagined or In Place in Four Lower- and Upper-Middle-Income Countries.	Pakistan, Mexico, Turkey and Cameroon	2024	Literature review	To examine the implementation of APN functions in pediatric oncology across low- and middle-income countries.
Torres Hernández y Martínez Gurrión	Advanced Practice Nursing: an option for strengthening the professional capacity of nursing in the context of aging	Mexico	2017	Thematic discussion	To highlight, through a thematic discussion, the importance of reviewing APN.
Zug et al.	Advanced Practice Nursing in Latin America and the Caribbean: regulation, education and practice	Latin America and the Caribbean	2016	Descriptive cross-sectional study	To examine the current regulation, education, and implementation of APN in Latin America and the Caribbean, and to explore nursing leaders' perspectives on advanced practice roles within PHC.

Note. The characteristics outlined correspond exclusively to the studies selected after the application of the inclusion and exclusion criteria; APN = Advanced Practice Nursing; PHC = Primary Health Care.

Source: prepared by the authors based on the included studies.

Study objectives primarily addressed the conceptualization of APN, the characterization of competencies and domains across different clinical contexts, and the feasibility of implementing the role in specialized areas (intensive care, nephrology, pediatric oncology, and first-contact healthcare services). Additionally, several texts examined the regulatory and educational frameworks and proposed academic and policy strategies to consolidate the role of APN in Mexico.

Considerable variability was observed regarding the conceptualization of APN. As shown in Table 3, 12 articles (27.9%) faithfully adopted the ICN definition and agreed on the need for training at the master's degree level. Eighteen articles (41.9%), partially concurred; that is, they incorporated key ICN elements (autonomy, complex decision-making, competencies, and postgraduate training), but did so in an incomplete manner; and 14 articles (30.2%) presented researcher-proposed definitions of APN without reference to ICN criteria.

Table 4 presents the APN domains identified in each study. The presence or absence of the domains proposed by the ICN and international consensus frameworks were recorded. The present review analyzed these domains because they functioned as structural categories that grouped specific competencies.

The last row shows the absolute frequency and percentage of occurrence for each domain. The most frequently identified domains were evidence-based research and practice, care management, interprofessional collaboration, and clinical quality and safety management (>88%). Cultural competence and patient advocacy were reported less frequently (<30%), as were other essential components of the PHC approach. Regarding master's-level training, 19 documents (44.2%) included this requirement as part of APN education.

In the reviewed literature, APN was not systematically referenced as a cross-cutting axis in the conceptualization of advanced practice professionals in Mexico. Only seven documents (16.2%) situated advanced practice in services aligned with this approach, including self-care-oriented consulting, first-contact healthcare services, and the promotion of healthy lifestyles in specific populations.

Table 3. Comparison of the conceptualizations of Advanced Practice Nursing in the Mexican literature with the definition of the International Council of Nurses (ICN), Mexico, 2025

Categories of comparison ^a			Findings regarding articles classified as Did not conform to ICN
Conformed to ICN	Partially conformed to ICN	Did not conform to ICN	
Bryant-Lukosius et al.	Alarcón-Muñiz, Enrique-Chacón y Acosta Castañeda	Alonso Ricardez et al.	Defined advanced practice without reference either to master's-level training or to the ICN triad: expert knowledge, complex decision-making skills, and clinical competencies for expanded practice.
Casales-Hernández	Alcántara Ruiz	Bautista-Cabañas et al.	Focused on medical deficit and specialty clinical skills, without reference to master's-level training.
Cuevas Budhar	Alvarez Albino, Siguenza Sanchez y Rivas Espinosa	De La Cruz Martínez, Villegas-Pantoja y Fuentes Ocampo	Focused on promoting school health; did not define competencies or mention a master's-degree requirement.
De Bortoli et al.	Alvarez-Ramos et al.	García-Acosta et al.	Definition focused on the trans population; did not define clinical competencies or mention a master's degree requirement.
Lee et al.	Aranda-Ibarra et al.	Medrano-Mariscal	Addressed language and epistemology, did not include an operational definition or academic degree requirements.
Leija-Hernández et al.	Bortoli Cassiani et al.	Mendoza-Seme	Emphasized professional role based on training and supervisión; did not include a master's degree requirement.
Peralta-Peña y Escobar-Castellanos	Cuellar et al.	Naegle, Baumann y Denwood	Defined APN as a regional strategy, did not include the ICN triad or professional training.

Categories of comparison ^a			Findings regarding articles classified as Did not conform to ICN
Conformed to ICN	Partially conformed to ICN	Did not conform to ICN	
Reyes Audiffred y Leitón-Espinoza	dos Santos Bezerril et al.	Nigenda-López	Did not include the ICN triad; placed training at the specialty level.
Rodríguez-Duarte, Cruz-Ortiz y Pérez-Rodríguez	Fernández-Sánchez et al.	Pérez Delgado, Padilla Zarate y Pérez Mendoza	Emphasized legal responsibility, without considering the rest of the competencies or academic level.
DGCES, Ministry of Health	Gaona Rivera	Ramos	Defined profile oriented towards diabetes education; did not include the ICN triad or master's degree requirement.
Torres Hernández y Martínez Gurrión	Honig, Doyle-Lindrud y Dohrn	Rojas Torres y Gil Herrera	No definition offered.
Zug et al.	Lobo Cordero	Sarmiento Luna y Alvarez Aguirre	Did not include the ICN triad, competencies, or a master's degree requirement.
	Manuel-Martinez	Semerci et al.	Focused on pediatric oncology, specialized role, without ICN reference.
	Nigenda López y Aristizabal Hoyos		
	Peña-Núñez		
	Ponce Gómez et al.		
	Ramírez-Cortés		
	Ramírez Sánchez et al.		

^aThree categories were established: (1) **Conformed to ICN**: explicitly incorporated the three elements defined in this review as a triad: “expert knowledge, complex decision-making skills, and clinical competencies for expanded practice—along with a minimum master's degree; (2) **Partially conformed to ICN**: included some elements of the ICN definition, but incompletely or without explicit reference to an academic degree; (3) **Did not conform to ICN**: definitions did not integrate the fundamental criteria established by the ICN.

Source: prepared by the authors based on the included studies.

Table 4. Presence of Advanced Practice Nursing domains in the studies included in the scoping review, Mexico, 2025

Authors of studies included	Domains of Advanced Practice Nursing (APN) according to the ICN and other international organizations													
	Research and evidence-based practice	Clinical leadership and consultancy	Mentorship	Interprofessional collaboration and	Expert clinical judgement	Educational leadership	Quality management and	Care management	Autonomy for professional	Health promotion	Cultural competence	Protection and advocacy of patient	Academic training (master's degree)	
Alarcón-Muñiz, Enrique-Chacón y Acosta C.	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	No	
Alcántara Ruiz	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	
Alonso Ricardez et al.	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	
Álvarez Albino, Sigüenza Sánchez y Rivas Espinosa	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	
Álvarez-Ramos et al.	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	
Aranda-Ibarra et al.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	
Bautista-Cabañas et al.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	
Bortoli Cassiani et al.	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	
Bryant-Lukosius et al.	Yes	No	No	No	Yes	Yes	No	Yes	Yes	No	No	No	No	
Casales-Hernández	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	
Cuellar et al.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	
Cuevas Budhar	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	

Domains of Advanced Practice Nursing (APN) according to the ICN and other international organizations

Authors of studies included	Research and evidence-based practice	Clinical leadership and consultancy	Mentorship	Interprofessional collaboration and	Expert clinical judgement	Educational leadership	Quality management and	Care management	Autonomy for professional	Health promotion	Cultural competence	Protection and advocacy of patient	Academic training (master's degree)
De Bortoli et al.	Yes	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
De La Cruz Martínez, Villegas-Pantoja y Fuentes Ocampo	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No
dos Santos Bezerril et al.	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
DGCES, Ministry of Health	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Fernández-Sánchez et al.	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Gaona Rivera	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
García-Acosta et al.	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Honig, Doyle-Lindrud y Dohrn	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lee et al.	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Leija-Hernández et al.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lobo Cordero	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Manuel	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Medrano-Mariscal	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No
Mendoza-Seme	No	Yes	No	Yes	No	No	Yes	Yes	No	No	No	No	No

Domains of Advanced Practice Nursing (APN) according to the ICN and other international organizations

Authors of studies included	Research and evidence-based practice	Clinical leadership and consultancy	Mentorship	Interprofessional collaboration and	Expert clinical judgement	Educational leadership	Quality management and	Care management	Autonomy for professional	Health promotion	Cultural competence	Protection and advocacy of patient	Academic training (master's degree)
Naegle, Baumann y Denwood	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Nigenda López y Aristizabal Hoyos	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Nigenda-López	Yes	Yes	No	Yes	No	No	No	No	No	Yes	No	No	No
Peña	Yes	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No
Peralta-Peña y Escobar-Castellanos	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Pérez Delgado, Padilla Zarate y Pérez Mendoza	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ponce Gómez et al.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No
Ramírez	Yes	No	Yes	No	No	Yes	No	Yes	No	Yes	No	No	No
Ramírez Sánchez y Col.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Ramos	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Reyes Audiffred y Leitón-Espinoza	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Rodríguez-Duarte, Cruz-Ortiz y Pérez-Rodríguez	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No

Domains of Advanced Practice Nursing (APN) according to the ICN and other international organizations

Authors of studies included	Research and evidence-based practice	Clinical leadership and consultancy	Mentorship	Interprofessional collaboration and	Expert clinical judgement	Educational leadership	Quality management and	Care management	Autonomy for professional	Health promotion	Cultural competence	Protection and advocacy of patient	Academic training (master's degree)
Rojas Torres y Gil Herrera	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes
Sarmiento Luna y Álvarez Aguirre	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes
Semerci et al.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes
Torres Hernández y Martínez Gurrion	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Zug et al.	No	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No	Yes
Total n (%)^a	39 (90.7)	35 (81.4)	22 (51.2)	38 (88.4)	36 (83.7)	34 (79.1)	38 (88.4)	39 (90.7)	29 (67.4)	31 (72.1)	11 (25.6)	12 (27.9)	19 (44.2)

^aThe absolute frequency and percentage (%) of occurrence of each domain in the total number of analyzed studies are shown.

Note: The presence (Yes) or absence (No) of the domains proposed by the ICN and international consensus frameworks was recorded.

Source: prepared by the authors based on the included studies.

DISCUSSION

In Mexico, the conceptualization of Advanced Practice Nursing (APN) remains heterogeneous and insufficiently standardized, with interpretations ranging from definitions aligned with the International Council of Nurses (ICN) to partial models and fragmented views of the role^(6,20). This variability obscures clarity regarding its scope, essential domains, and required competencies, hindering its implementation and recognition across clinical and community settings.

The current context, shaped by demographic, social, and political transformations, calls for a renewal of care models within health systems at both national and international levels⁽²⁵⁾. In response, innovative strategies have been developed to address emerging population demands and persistent inequalities in access to and delivery of services, positioning APN as a key element for improving the efficiency, quality, and sustainability of health systems^(14, 26-31). In circumstances where universal access and coverage are global priorities, Primary Health Care (PHC) constitutes a fundamental pillar for their achievement⁽³²⁾.

The reviewed literature consistently described the clinical and organizational components of the APN role, while also highlighting the limited incorporation of the PHC approach in areas such as cultural competence and advocacy for patient rights^(14,17,18,20,33). These dimensions were presented as fundamental to strengthening the therapeutic relationship, ensuring equity, and addressing disparities that disproportionately affect diverse and vulnerable populations.⁽³⁴⁾ They were also considered essential for the effective implementation of the advanced practice role in accordance with the current care model in Mexico^(35,36).

Given the need for ongoing training in the above-mentioned dimensions, challenges related to the development of PHC were not identified as exclusive to APN; rather, they cut across the entire health workforce⁽¹⁹⁾. Nonetheless, the international evidence reviewed indicated that nursing participation in PHC contributed to reductions in morbidity and mortality by expanding professional autonomy, problem-solving capacity, the integration of cultural competencies, and the defense of human rights^(31,37,38). Together, these findings confirm the potential of APN to transform health services, provided that appropriate regulatory and institutional conditions are in place. While autonomy rests on a combination of experience, competence, and master's-level training, its effective exercise requires robust regulatory support, which remains lacking in Mexico. This poorly defined legal and regulatory framework generates organizational tensions and limits the full realization of the role.

Another significant finding was the tendency to equate APN with a clinical specialty, defined by scope of practice rather than by postgraduate preparation. However, beyond problem-solving and evidence-based practice, the role requires competencies that enable an understanding of health–disease–care processes within broader contextualized perspectives⁽³⁹⁾. The low percentage of studies referencing master's-level training was consistent with the proportion of documents that did not include the complete ICN definition, highlighting fragmented and heterogeneous conceptualizations of the role.

Furthermore, a gap was identified between advanced academic training and autonomous practice, exacerbated by a deficient regulatory framework. This insufficient consolidation of the APN role prevents nursing professionals from fully realizing their potential in delivering person-centered care, a particularly concerning issue in the management of complex cases given the substantial economic burden they impose on the country.

The failure to enact standardized policies for the regulation and accreditation of APN professionals emerged as another significant barrier, hindering role consolidation, limiting international collaboration, and complicating comparative studies^(6,21). Moreover, the situation was shown to be aggravated by factors related to professional recognition: Mexican nursing leadership has historically been low-key and centered on everyday clinical practice, without fully establishing a presence in decision-making spaces⁽⁴⁰⁾. Available evidence further suggests a resistance to change among other health professionals, who perceive the redistribution of functions as a threat to their professional domains, as well as hesitancy among nurses to assume new and expanded responsibilities without adequate incentives, including financial ones⁽²⁰⁾.

In this context, the limited number of studies with mixed-methods designs takes on particular relevance, as these approaches enable the development of broader,

triangulated competency frameworks by integrating the perceptions of key stakeholders with empirical findings that support the feasibility, relevance, and normative legitimacy of the role. Quantitative research reported advanced nursing practices being carried out de facto in high-demand settings—such as home care and health emergencies—without corresponding regulatory support. ^(6,41–47) Although the description of competencies was often limited, consensus was noted on the need for clinical protocols, problem-solving skills, and formal recognition of the APN role. This gap between actual practice and the regulatory framework reflects a challenge shared with other countries in the region.

Qualitative investigations, in turn, provided a structural view by examining regulatory frameworks, training processes, and mechanisms for consolidating the role of APN^(48–52). These analyses identified regulatory and educational barriers and highlighted the relevance of competencies such as clinical decision-making, care management, and problem-solving skills. They were also consistent in emphasizing the importance of leadership, education, and interprofessional collaboration as central pillars for ensuring the sustainability of the APN role within health systems^(47,53,54).

Finally, opinion pieces, editorials, and policy documents offered normative reflections, curricular recommendations, and public policy guidelines. ^(55–61) Although these sources lacked empirical evidence, they contributed strategic insight by converging on the need for APN competencies in leadership, complex problem-solving, interprofessional collaboration, continuing education, and research. Their principal value lay in highlighting the conditions required for the institutionalization of the role through effective governance and health system transformation, thus reinforcing the idea that its consolidation demands both structural changes and sustained political commitment.

Taken together, the reviewed evidence revealed a broad consensus on the need to formally conceptualize APN and strengthen specific competencies in core areas such as advanced clinical practice, leadership, care management, education, and research. ⁽³⁾ In view of the identified gaps—imprecise conceptualizations, heterogeneous functions, and weak alignment with PHC—the present review proposes a definition adapted to the Mexican context, in line with ICN/WHO guidelines, grounded in the PHC approach, and informed by the critical and situated perspective of the Xochimilco Model. ⁽⁶²⁾ This proposal aims to address conceptual shortcomings, facilitate the implementation of APN in Mexico, and contribute to improving care under principles of autonomy, equity, and respect for human rights.

Proposed Conceptualization of Advanced Practice Nursing (APN) for Mexico from an Academic Perspective

The following definition was formulated based on the findings of the present scoping review: Advanced Practice Nursing in Mexico refers to the autonomous, critical, and socially committed professional role of nurses prepared at the master's level in this field. Such training enables the integration of clinical, pedagogical, and community knowledge—the latter recognized in the relevant Mexican literature—to identify health needs and develop innovative approaches to care.

Guided by the principles of the Xochimilco Model, APN in Mexico pursues social transformation through the critical analysis of health determinants and the management of care within the framework of PHC⁽⁶²⁾. APN professionals develop participatory strategies in collaboration with diverse communities, recognizing their knowledge and

contexts. They act in complex settings by applying expanded competencies, exercising ethical leadership, engaging in interprofessional collaboration, and producing knowledge aimed at addressing structural challenges from a critical, participatory, and intersectoral perspective^(63,64).

Owing to their autonomy and professional responsibility, APN practitioners conduct advanced assessments and comprehensive diagnoses based on interdisciplinary theoretical frameworks and integrative methodologies. Their function prioritizes participatory health-promotion and disease-prevention interventions centered on the needs and preferences of individuals, families, and communities throughout the care continuum. Their training in real-world settings fosters shared responsibility in health-illness-care processes and contributes to the development of collective capacities⁽⁹⁾.

From a situated epistemological perspective that articulates theory, practice, research, and experience, APN promotes the production of contextualized and ethically grounded knowledge, strengthening political participation and the profession's involvement in health advocacy. In doing so, it becomes a key actor in the transformation of the health system in Mexico grounded in principles of equity, social justice, and the right to health.

Collectively, the findings of this scoping review confirm that the conceptualization of the APN role in Mexico remains heterogeneous and insufficiently standardized, exhibiting discrepancies with respect to the essential domains and competencies described by the ICN. These conceptual gaps are reflected in the uneven implementation of the role in hospital and community settings. While advanced clinical skills and leadership are increasingly recognized, key components of the PHC approach, such as cultural competence and advocacy, have yet to be developed. In addition, inconsistencies persist regarding the required level of training. These shortcomings limit the consolidation of the role and its contribution to strengthening the health system.

Achieving viable implementation will require an intersectoral effort to align regulatory frameworks, postgraduate education, and care-delivery models. This would enable APN professionals to fully exercise their autonomy in complex patient evaluation, care management, and clinical as well as community decision-making. Furthermore, future research should expand the documentation of practice-based experiences, further develop contextualized competency frameworks, and examine the impact of APN on health outcomes and equity.

The APN definition proposed in this study is adapted to the national context and highlights the need to build academic, regulatory, and operational linkages that support the consolidation of advanced practice in Mexico under a critical, situated, and PHC-oriented framework.

Document heterogeneity limited the ability to compare findings and synthesize them consistently. Potential sources of distortion included publication bias and the uneven geographic distribution of gray literature. In addition, the level of detail with which domains were reported varied. Finally, the analysis was based on frequency counts rather than causal inference, as the panoramic review design did not aim to establish relationships between domains and improvements in care. Nonetheless, these findings provide a foundation for future studies.

The assessment of study rigor was conducted qualitatively; future updates could apply alternative methodologies to evaluate confidence in the findings. This review emphasized the inclusion of all eligible documents to capture the full range of perspectives on the conceptualization of APN in Mexico.

REFERENCES

1. Organización Mundial de la Salud. Año Internacional del Personal de Enfermería y de Partería [Internet]. OMS2023 [cited 2023 Feb 26]; Available from: <https://www.who.int/es/campaigns/annual-theme/year-of-the-nurse-and-the-midwife-2020#:~:text=A%20fin%20de%20lograr%20la,de%20Enfermer%C3%ADa%20y%20de%20Parter%C3%ADa>
2. Organización Panamericana de la Salud. Orientación estratégica para enfermería en la Región de las Américas [Internet]. Washington, D.C.: 2019 [cited 2025 Sep 11]. Available from: <https://www.paho.org/es/documentos/orientacion-estrategica-para-enfermeria-region-americas>
3. World Health Organization. State of the world's nursing 2025: investing in education, jobs, leadership and service delivery [Internet]. Geneva: 2025 [cited 2025 Sep 11]. Available from: <https://iris.who.int/handle/10665/381329>
4. Sastre-Fullana P, De Pedro-Gómez JE, Bennasar-Veny M, Fernández-Domínguez JC, Sesé-Abad AJ, Morales-Asencio JM. Consenso sobre competencias para la enfermería de práctica avanzada en España. *Enferm Clin* 2015;25(5):267–75.
5. Schober M, Stewart D. Developing a consistent approach to advanced practice nursing worldwide. *Int Nurs Rev* 2019;66(2):151–3.
6. Lee GA, Aristizabal P, Walters G, Zárate-Grajales RA, Nigenda G. Advanced Practice Nursing Roles: A Comparison Between Mexico and the United Kingdom. *J Nurs Regul* 2022;13(1):27–34.
7. Gysin S, Sottas B, Odermatt M, Essig S. Advanced practice nurses' and general practitioners' first experiences with introducing the advanced practice nurse role to Swiss primary care: a qualitative study. *BMC Fam Pract* 2019;20(1):163.
8. Heale R, Butcher M. Canada's First Nurse Practitioner-Led Clinic: A Case Study in Healthcare Innovation. *Nurs Leadersh (Tor Ont)* 2010;23(3):21–9.
9. Universidad Autónoma Metropolitana-Xochimilco. Plan y Programa de estudios de la Maestría en Enfermería de Práctica Avanzada [Internet]. Xochimilco, México: 2021 [cited 2025 Sep 11]. Available from: https://cbstmp.xoc.uam.mx/archivos/plan_programa_estudios_MEPA.pdf
10. Peralta-Peña SL, Escobar Castellanos B. Maestría en Enfermería de Práctica Avanzada para el noroeste de México por la Universidad de Sonora. *SANUS* 2023;8(1): e450.
11. Chávez-Chan M, Cerqueda-Álvarez C. Participación en el Foro: Rol ampliado de enfermería en el contexto nacional. *Boletín electrónico de la Sociedad Mexicana de Salud Pública* 2025. Available from: <https://www.smsp.org.mx/docs/boletin/SMSP-boletin-junio-2025.pdf>
12. Consejo Internacional de Enfermeras. Directrices de enfermería de práctica avanzada [Internet]. Ginebra: 2020 [cited 2025 Sep 11]. Available from: <https://www.icn.ch/es/recursos/publicaciones-e-informes/directrices-de-enfermeria-de-practica-avanzada-2020>
13. WHO. Ampliación de los enfermeras y enfermeros en la atención primaria a la salud [Internet]. Washington, D C: 2018 [cited 2025 May 23]. Available from: <https://iris.paho.org/handle/10665.2/34959>

14. Leija-Hernández C, Olivera-Carrasco H, Acuña-Díaz MC, Zárate-Grajales RA, Choperena-Aguilar DG. Estrategia Integral para la Ampliación del Rol de Enfermería en la Atención Primaria de Salud. *Enfermería Universitaria* 2020;17(2):243–57.
15. Armas-Ferrer EA, Rivas-Díaz LH, Loli Ponce RA. Enfermería de práctica avanzada en atención primaria de la salud. *Rev Cubana Enferm [Internet]* 2023 [cited 2025 Sep 10];39. Available from: https://creativecommons.org/licenses/by-nc/4.0/deed.es_ES
16. Mármol-López M, Montoya M, Montejano Lozoya R, Escribano Pérez A, Gea-Caballero. Impacto de las intervenciones enfermeras en la atención a la cronicidad en España. Revisión sistemática. *Rev Esp Salud Pública* 2018;(92).
17. Reyes-Morales H, García-Peña M del C, Lazcano-Ponce E. La atención primaria como eje del sistema nacional de salud. *Salud Publica Mex* 2024;66(5, sept-oct):631–6.
18. Fernández-Sánchez H, Landeros-Olvera E, Flores-Melgarejo C, Zapién-Vázquez MÁ. Recomendaciones para la formación de profesionales en enfermería de práctica avanzada en México. *Enfermería Universitaria* 2023;20(1):86–99.
19. van Diggele C, Roberts C, Burgess A, Mellis C. Interprofessional education: tips for design and implementation. *BMC Med Educ* 2020;20(S2):455.
20. Casales-Hernández MG, Reyes-Morales H, Nigenda G, García-Saisó S. Exploración de facilitadores y barreras para implementar los roles ampliados de enfermería en México. *Revista Panamericana de Salud Pública* 2023; 47:1.
21. Aristizabal P, Nigenda G, Squires A, Rosales Y. Regulación de la enfermería en México: actores, procesos y resultados. *Cien Saude Colet* 2020;25(1):233–42.
22. Nigenda G, Lee G, Aristizabal P, Walters G, Zárate-Grajales RA. Progress and challenges for advanced practice nursing in Mexico and the United Kingdom. *J Nurs Manag* 2021;29(8):2461–9.
23. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. Declaración PRISMA 2020: una guía actualizada para la publicación de revisiones sistemáticas. *Rev Esp Cardiol* 2021;74(9):790–9.
24. Sánchez-Martín M, Pedreño Plana M, Ponce Gea AI, Navarro-Mateu F. And, at first, it was the research question. The PICO, PECO, SPIDER and FINER formats. *Espiral Cuadernos del profesorado* 2023;16(32):126–36.
25. Franco Giraldo ADJ. Configuraciones, modelos de salud y enfoques basados en la Atención Primaria en Latinoamérica, siglo XXI. Una revisión narrativa. *Gerencia y Políticas de Salud* 2020;19.
26. Organización Mundial de la Salud. HEARTS en las Américas: documentos técnicos [Internet]. Organización Panamericana de la Salud [cited 2022 Mar 9]; Available from: <https://www.paho.org/es/hearts-americas>
27. Casales-Hernández MG, Molina-Cuevas V, Gloria-Hernández LE, Díaz-Aguilera MA, Malo-Serrano HM. Resultados preliminares de la Iniciativa HEARTS en México: facilitadores y barreras de los sistemas de información. *Revista Panamericana de Salud Pública* 2022; 46:1.
28. Ordunez P, Campbell NRC, Giraldo Arcila GP, Angell SY, Lombardi C, Brettler JW, et al. HEARTS en las Américas: innovaciones para mejorar el manejo de la hipertensión y del riesgo cardiovascular en la atención primaria. *Rev Panam Salud Publica* 2022; 46:1.
29. Bautista-Arredondo S, Vargas-Flores A, Moreno-Aguilar LA, Colchero MA. Utilización de servicios de salud en México: cascada de atención primaria en 2022. *Salud Publica Mex* 2023;65: s15–22.
30. Abramo L, Cecchini S, Ullmann H. Enfrentar las desigualdades en salud en América Latina: el rol de la protección social. *Cien Saude Colet* 2020;25(5):1587–98.

31. Renkema M, Leede J, Van Zyl LE. High-involvement HRM and innovative behaviour: The mediating roles of nursing staff's autonomy and affective commitment. *J Nurs Manag* 2021;29(8):2499–514.
32. Sarmiento Luna FB, Álvarez Aguirre A. Enfermería de Práctica Avanzada: implementación en México y contribución a la Atención Primaria de Salud. *ACC CIETNA: Revista de la Escuela de Enfermería* 2025;12(1): e1180.
33. Hincapié-Carvajal JA, Cedeño-Camaño Z, Igualá-González N, Martínez-Salazar AL, Martínez-Sandoya A, Arias-Murcia SE. Competencia cultural de profesionales de salud en la atención a pacientes con cáncer: scoping review. *Rev Gaucha Enferm* 2025;46.
34. Andrea L, Carranza R, Rodríguez López JI. Responsabilidad: social una mirada desde la educación, el desarrollo territorial y la transparencia Responsabilidad social: una mirada desde la educación, el desarrollo territorial y la transparencia [Internet]. 1ra ed. Colombia: Universidad Piloto de Colombia; 2021 [cited 2021 Jul 13]. Available from: <http://repository.unipiloto.edu.co/bitstream/handle/20.500.12277/10407/Responsabilidad%20Social.pdf?sequence=5&isAllowed=y>
35. Secretaría de Salud. Atención Primaria a la Salud Integral e Integrada APS-I Mx: la propuesta metodológica y operativa. Ciudad de México: 2020. [cited 2025 Sep 10]. Available from: http://sidss.salud.gob.mx/site2/docs/Distritos_de_Salud_VF.pdf
36. Subsecretaría de Integración y Desarrollo del Sector Salud. Intervenciones de APS-I MX en los Distritos de Salud. Ciudad de México: 2020. [cited 2025 Ags 08]. Available from: https://www.gob.mx/cms/uploads/attachment/file/557320/3.1_VERSION_DIGITAL_20-06-2020_Intervenciones_de_APS-I_Mx_en_DS.pdf
37. Koponen AM, Simonsen N, Suominen S. Quality of primary health care and autonomous motivation for effective diabetes self-management among patients with type 2 diabetes. *Health Psychol Open* 2017;4(1).
38. Gottlieb LN, Gottlieb B, Bitzas V. Creating Empowering Conditions for Nurses with Workplace Autonomy and Agency: How Healthcare Leaders Could Be Guided by Strengths-Based Nursing and Healthcare Leadership (SBNH-L). *J Healthc Leadersh* 2021; Volume 13:169–81.
39. Canga-Armayor N. La formación académica de las enfermeras que desarrollan roles de práctica avanzada. *Enferm Intensiva* 2024;35(4): e41–8.
40. Nigenda López GH, Aristizábal Hoyos GP. El liderazgo silencioso de la enfermería en México: reflexiones sobre su transformación. *Revista CuidArte* 2020;9(18.1).
41. Cuevas Budhar MÁ. Perfil competencial de la enfermera de práctica avanzada en el ámbito de la Nefrología en México y España. Universidad Complutense de Madrid 2024. Available from: <https://docta.ucm.es/entities/publication/20cc9d5c-c6a6-470d-ae70-30de434a44aa>
42. Álvarez Ramos CD, Olgún López DY, Villa González JÁ, Cortes Asencio SJ. Enfermería y Práctica Avanzada en unidad de terapia intensiva y coronarios del hospital central militar: análisis de factibilidad. *Revista Mexicana de Enfermería Cardiológica* 2015;23(2):66–75.
43. Cassiani S, Aguirre-Boza F, Hoyos M, Barreto M, Morán L, Cerón M. Competencies for training advanced practice nurses in primary health care. *Acta Paul Enferm* 2018;31(6):572–84.
44. Casales-Hernández MG. Implementación de una intervención educativa con enfoque en roles ampliados de enfermería para mejorar las competencias laborales de los profesionales en la atención de diabetes mellitus. UNAM. México 2024. Available from: <https://hdl.handle.net/20.500.14330/TES01000850603>

45. Cuellar-Buendía JA, Suasto-Gómez WM, Romero-Cisneros LS, Chaparro-Sánchez MA, Tapia-Juárez YE, Fabián-Victoriano MaR. Identificación de competencias de enfermería de práctica avanzada en profesionales de clínicas de cuidado especializado. *Revista de Enfermería Neurológica* 2024;22(3).
46. Ponce Gómez G, Carmona Mejía B, Bernal Becerril ML, González Juárez G, Huerta González S. Telecuidado y atención domiciliaria en adultos mayores con Covid19: El caso de especialistas en enfermería. *Revista CuidArte* 2024;13(26).
47. Zug KE, Cassiani SHDB, Pulcini J, Garcia AB, Aguirre-Boza F, Park J. Advanced practice nursing in Latin America and the Caribbean: regulation, education and practice. *Rev Lat Am Enfermagem* 2016;24(0).
48. Cassiani SHDB, Lecorps K, Rojas Cañaverl LK, da Silva FAM, Fitzgerald J. Regulation of nursing practice in the Region of the Americas. *Revista Panamericana de Salud Pública* 2020; 44:1.
49. Honig J, Doyle-Lindrud S, Dohrn J. Avançando na direção de cobertura universal de saúde: competências de enfermeiros de práticas avançadas. *Rev Lat Am Enfermagem* 2019;27.
50. Ramírez Sánchez SC, Maytorena RS, Noh Moo PM, Tirado Reyes R. La ciencia del cuidado: una visión a las necesidades de enfermería. *Revista CONAMED* 2024;29(1):91–4.
51. Ramírez Cortés DV. Experiencias del cuidador familiar de personas adultas mayores con enfermedades crónicas. 2021. Available from: <https://ru.dgb.unam.mx/items/b27aa87d-8bc7-40c0-a604-bc773fec379a>
52. Rojas Torre IL, Gil Herrera RDJ. Estrategias de Atención Primaria en salud en cinco países latinoamericanos. *Archivos Venezolanos de farmacología y terapéutica* 2021;40(7):711–9.
53. Bryant-Lukosius D, Valaitis R, Martin-Misener R, Donald F, Peña LM, Brousseau L. Advanced Practice Nursing: A Strategy for Achieving Universal Health Coverage and Universal Access to Health. *Rev Lat Am Enfermagem* 2017;25(0).
54. García-Acosta JM, Castro-Molina FJ, Fernández-Martínez AD, Delgado-Reyes A, Castellano-Fuenmayor MA. Best Nursing Practice: Safe and Inclusive Healthcare Environments for Transgender People: A Systematic Review. *Nurs Rep* 2024;14(1):287–302.
55. Aranda-Ibarra JR, Hernández-Vergara CI, Rodríguez-Vega AI, Acosta-Castañeda G. El cuidado en la Enfermería de Práctica Avanzada. *Rev Enferm Inst Mex Seguro Soc* 2019;27(4):237–41.
56. Nigenda-López G. Desafíos en la formación de recursos humanos en salud. *Enfermería Universitaria* 2024;19(2):103–6.
57. Rodríguez-Duarte KJ, Cruz-Ortiz M, Pérez-Rodríguez M del C. Del cuidado intensivo al cuidado crítico, un cambio de nombre que refleja evolución. *Rev Enferm Inst Mex Seguro Soc* 2020;28(2):134–43.
58. Alonso Ricardez A, Cuevas Guajardo L, Valera Mota MM, Alonso Trujillo J, Regalado Ruíz LA. Áreas de oportunidad y el rol del investigador en Enfermería. *Revista CuidArte* 2018;7(14):42.
59. De la Cruz Martínez A, Villegas Pantoja MÁ, Fuentes Ocampo L. Análisis de concepto: Enfermería de Práctica Avanzada en la prevención de adicciones en adolescentes. *Horiz Enferm* 2025;36(1).
60. Bezerril M, Chiavone F, Mariz C, Sonenberg A, Enders B, Santos V. Advanced practice nursing in Latin America and the Caribbean: context analysis. *Acta Paul Enferm* 2018;31(6):636–43.

61. Naegle MA, Baumann A, Denwood D. A commentary on the Pan American Network of Nursing and Midwifery Collaborating Centres. *Revista Panamericana de Salud Pública* 2023; 47:1.
62. Universidad Autónoma Metropolitana. Documento Xochimilco. Primera edición digital 2016. México. Available from: https://vinculacionyfa.xoc.uam.mx/publicaciones_pdf/documento_xochimilco.pdf.
63. Casales Hernández MG, Ramírez Villegas R, Lozano Daza A, Rizo Amézquita JN. Enfermería de Práctica Avanzada: una propuesta estratégica para abordar los determinantes sociales de la salud. *Boletín electrónico de la Sociedad Mexicana de Salud Pública* 2025;38–9.
64. Correa Argueta E, Hernández Zavala M, Escobar de la Rosa D, Rizo Amézquita JN. Impulso de la Práctica Avanzada en México desde diálogos interinstitucionales de la UAM-X. *Boletín electrónico de la Sociedad Mexicana de Salud Pública* 2025;20–2.