



Original article

Identificación de competencias de enfermería de práctica avanzada en profesionales de clínicas de cuidado especializado

Identification of advanced practice nursing competencies in professionals from specialized care clinics

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Resumen

Introducción: para la implementación exitosa de la Enfermería de Práctica Avanzada (EPA), es necesario identificar y diferenciar a los profesionales que poseen este perfil acorde a las competencias que la caracterizan, luego, llevar a cabo estrategias dirigidas a potenciarlas y fortalecerlas.

Objetivo: identificar las competencias de EPA de los profesionales que laboran en Clínicas de Cuidado Especializado de un Hospital de Segundo Nivel en México.

Material y métodos: estudio observacional, descriptivo, transversal, prospectivo. Se incluyó a todas las enfermeras adscritas a las clínicas de cuidado especializado (n=28): terapia de infusión, gerontogeriatría, heridas y estomas, cuidado de la piel y prevención de lesiones asociadas a la dependencia, dolor y cuidados paliativos y reemplazo renal a quienes se les aplicó el Inventario para la Evaluación de Competencias de Enfermería de Práctica Avanzada (IECEPA), que identifica competencias de EPA a través de 8 dimensiones.

Resultados: los puntajes medios obtenidos respecto a las competencias de EPA: investigación y práctica basada en la evidencia ($\bar{x}=30.03$), liderazgo clínico y profesional ($\bar{x}=14.92$), autonomía profesional ($\bar{x}=32.57$), relaciones interprofesionales y mentoría ($\bar{x}=26.03$), gestión de la calidad ($\bar{x}=15.67$), gestión de cuidados ($\bar{x}=24.17$), enseñanza y educación profesional ($\bar{x}=17.85$), promoción de la salud ($\bar{x}=15.17$).

Limitaciones del estudio: no existe un instrumento adaptado al contexto mexicano que identifique competencias de EPA.

Originalidad: los autores declaran que se trata de un artículo original.

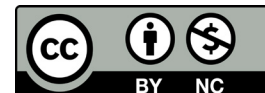
Conclusiones: esta investigación representa un avance en la implementación de la EPA, pues permitió identificar la práctica avanzada de los profesionales que integran las clínicas de cuidado especializado.

Palabras clave: enfermería de práctica avanzada, competencias, clínicas de cuidado especializado.

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Abstract

Introduction: For the successful implementation of Advanced Practice Nursing (APN), it is necessary to identify and differentiate the professionals who possess this profile according to the competencies that characterize it, and then to carry out strategies aimed at enhancing and strengthening them.

Objective: to identify the APN competencies of professionals working in Specialized Care Clinics of a Second Level Hospital in Mexico.

Material and methods: observational, descriptive, cross-sectional, prospective study. All nurses assigned to specialized care clinics (n=28) were included: infusion therapy, gerontogeriatrics, wounds and stomas, skin care and prevention of injuries associated with dependency, pain and palliative care, and renal replacement, to whom the Advanced Practice Nursing Competency Evaluation Instrument (APNCEI) was applied, which identifies APN competencies through 8 dimensions

Results: mean scores obtained for APN competencies: research and evidence-based practice ($\bar{x}=30.03$), clinical and professional leadership ($\bar{x}=14.92$), professional autonomy ($\bar{x}=32.57$), interprofessional relations and mentoring ($\bar{x}=26.03$), quality management ($\bar{x}=15.67$), care management ($\bar{x}=24.17$), teaching and professional education ($\bar{x}=17.85$), health promotion ($\bar{x}=15.17$).

Limitations of the study: There is no instrument adapted to the Mexican context that identifies APN competencies.

Originality: The authors declare that this is an original article.

Conclusions: This research represents an advance in the implementation of the APN since it allowed the identification of the advanced practice of the professionals who integrate the specialized care clinics.

Keywords: advanced nursing practice, competences, specialized care clinics.

Introduction

The increase in the incidence and early prevalence of chronic degenerative diseases, the progressive aging of the population, the emergence of new global pandemics, the deficit of physicians, and the lack of access and universal health coverage, require that the nursing profession is constantly redefined through the generation of new roles based on knowledge with scientific evidence and focused practice, which guarantee the quality and efficiency

of care, as well as contribute to the access and coverage of universal health care.^{1,2,3}

The APN emerged in the 1970s in Canada and the United States of America, through two figures: Nurse Practitioner (NP) and Clinical Nurse Specialist (CNS). The NP has assessment, diagnostic, and treatment skills; he/she is in charge of direct patient care, while the CNS has in-depth knowledge of a specialized area of nursing; apart from patient care, he/she is in charge of training nursing staff in quality of care; he/she has leadership and evidence-based practice

skills. Both arise in these countries due to the deficit of physicians and the lack of access to and coverage of health services, these nurses were in charge of providing primary health care with effectiveness, safety, and quality.^{4,5,6}

The role of APNs is based on the models of *task shifting* and *skill mix*. Task shifting is a process by which tasks are shifted, allowing the workforce to be reorganized and making more efficient use of human resources; it is applied in the healthcare context in response to the shortage of health professionals.

In task shifting, APNs would perform certain duties of the physician in primary health care, as well as other activities that would include diagnosis and treatment; always from a nursing care model: preventive, holistic, promotive, and patient-centered.

The concept of skill mix can be classified into substitution and diversification. Substitution refers to replacing one professional with another to increase efficiency, improve results, and reduce costs. Diversification consists of introducing new professional groups to broaden the range of skills that can be provided.⁷

At least 38 countries have now introduced APN roles, especially high-income countries such as Australia, Belgium, Canada, Cyprus, the United States of America, Finland, France, Ireland, Japan, Poland, the United Kingdom, and the Czech Republic, where APNs have made a significant contribution to the development and functioning of health systems, improved accessibility to primary health care services and reduced health care costs.^{8,9}

The Canadian Nurses Association (CNA)

defines APN as a generic term that describes an advanced level of clinical nursing practice, which maximizes the utilization of postgraduate educational preparation with in-depth knowledge and experience in addressing the health needs of individuals, families, groups, communities, and populations. For the CNA, APNs possess the training, clinical expertise, leadership skills, and understanding of organizations, have an important role in health policy, and make decisions that affect patient and system health outcomes.¹⁰

For its part, PAHO/WHO considers the APN as a professional with postgraduate training who, integrated into the interprofessional team of the first level of health care services, contributes to the management of the care of patients/users with mild acute illnesses and diagnosed chronic disorders, under the guidelines of clinical protocols or manuals. The extended professional practice differs from that of the primary care nurse in the degree of autonomy in decision-making, including the diagnosis and treatment of the patient's disorders.⁷

APN has the following core competencies:

- a. **Experience in clinical practice:** implies the competencies of consultant, collaborator, communicator, use of critical thinking and advanced assessment, intervention and evaluation skills, as well as ethical decision making and use of leadership tools. This is fostered by the specialization and the development of knowledge in areas such as diagnosis and treatment linked to various methods that seldom used by nurses, for example, the physical examination. The latter includes diagnostic tests and

- interpretation, planning and managing complete episodes of care, team work, delegating and resolving challenges appropriately to optimize health outcomes and the use of resources.
- b. **Educator:** with the competencies of education, mentor, and role model.
 - c. **Research:** ability to monitor and improve the quality of care and effectiveness of their practice, evaluation and selection of the best evidence in the literature and transfer to practice. Similarly, they can conduct their research and dissemination in scientific journals.
 - d. **Self and organizational professional development:** includes change agent and leadership competencies, generates governance systems, implements evidence-based protocols, optimizes processes, policies, and clinical guidelines; includes management competencies; policy development and implementation, decision making and practice innovations.^{7,11}

In the Region of the Americas, the role of the APN is being implemented. It is believed that the APN can play a crucial role in the advancement of primary health care, health promotion, disease prevention, adequate control of communicable and non-communicable diseases, and care especially in rural, and underserved areas, thus achieving universal health access and coverage.

Jamaica, the country with the most experience in this area, introduced the role of family NP, pediatrics, and mental health/psychiatry as a response to the lack of physicians in rural areas and the scarce health services in the communities since 1977.

In Mexico, in 2017 the Ministry of Health integrated working groups composed of national and international leaders and experts from various institutions and agencies: the Ministry of Health, the National Autonomous University of Mexico, the Autonomous Metropolitan University, and the Pan American Health Organization. They designed a strategy that contributes to the solution of the problems caused by the inequality in coverage and effective access to health services, the imbalance between the burden of chronic non-communicable diseases, and the insufficient response of the health system, through the optimization and distribution of nursing functions.

This comprehensive strategy consists of expanding the role of nurses at the primary care level, with the aim of establishing a human resources training policy and incorporating this new role into the Mexican health system. It intends for human resources in health to be actively deployed in the community, aimed at health promotion, disease prevention, early care, and timely intervention to prevent complications.

The work team agreed on the need to create two new nursing job profiles in Mexico: expanded role nursing (ERN) and advanced practice nursing (APN). ERN refers to the insertion in the first level of care of those human resources that meet the professional and labor requirements where, through robust training schemes, the definition of areas of interprofessional competence, among other resources and support, allow them to acquire an advanced role, with greater autonomy and significant

participation within the health team. The APN will be composed of professionals with a minimum level of a professional master's degree, development of professional experience in the clinical field, possessing a range of scientific knowledge, skills, ethical principles and values that legitimize their autonomy for innovation and improvement of care, as well as a series of specialization options linked to the needs of the population.

Similarly, the Mexican framework of competencies is developed, which defines the scope of knowledge, skills, and abilities necessary for the expansion of the nursing role in Mexico, with a perspective of comprehensive care of the person, family, or community. In this way, the total capabilities of the nursing staff are optimized to strengthen the efforts of the health system and contribute to the achievement of universal access and coverage in health, prioritizing the first level of care in Mexico.¹²

Accordingly, the Dr. Manuel Gea González General Hospital in Mexico City seeks to implement an advanced practice nursing model in its 6 specialized care clinics: 1. infusion therapy, 2. skin care and prevention of injuries associated with dependency, 3. gerontogeriatrics, 4. renal replacement, 5. wounds and stomas, and 6. pain and palliative care, and integrate them into an Advanced Practice Nursing Center (APNC) to guarantee access and health coverage for all its users. In this way, the APNs will provide timely specialized care, education, and health promotion aimed at preventing complications. These specialized clinics are integrated and led by nursing professionals who provide comprehensive care, with a great humanistic sense to the

person and his family, in the outpatient and inpatient setting according to their area of specialization, using the technological resources, supplies, and infrastructure available in the hospital.

However, to this end, it is essential to begin by identifying the extent to which the professionals who make up these clinics possess APN competencies. This will make it possible to differentiate nursing practice through the different roles, distinguish the professionals who carry out the advanced practice and know their competencies,^{13,14,15} in addition to carrying out specific interventions to strengthen or enhance them.

For this purpose, we used the instrument designed and validated by Sastre¹⁷ in 2016: the Inventory for the Evaluation of Advanced Practice Nursing Competencies (IECEPA). This instrument, in addition to being useful for the evaluation/identification of basic advanced practice nursing competencies, can also be used to manage the selection and education of advanced practice nurses, to develop the advanced practice nursing role in healthcare organizations, or to formalize levels of advanced practice that are not recognized in certain settings.

Target

To identify advanced practice nursing competencies in professionals working in specialty care clinics.

Material and methods

Observational, descriptive, cross-sectional,

prospective study. The sampling was non-probabilistic by convenience; it included all nursing professionals assigned to the specialized care clinics: infusion therapy, skin care and prevention of injuries associated with dependency, gerontogeriatrics, renal replacement, wounds and stomas, and pain and palliative care (n=28) of the Hospital General Dr. Manuel Gea González, of both sexes, basic and temporary, from the four work shifts (morning, afternoon, night A and night B), who agreed to participate, signed the informed consent and privacy notice, excluding all those who were on vacation, rest or for any other reason were not in the hospital at the time of data collection. The Advanced Practice Nursing Competency Assessment Instrument (APNCAI) was applied to them; it evaluates APN competencies through 8 dimensions: evidence-based practice research, clinical and professional leadership, professional autonomy, interprofessional relations and mentoring, quality management, care management, teaching and professional education, and health promotion. The overall reliability is 0.96 by Cronbach's α coefficient, it is a self-assessment instrument that uses a five-point Likert scale, ranging from "never" to "always", and is composed of 44 items.

The data obtained were then analyzed through descriptive statistics using SPSS version 25. The sociodemographic variables of the surveyed professionals were analyzed: age, sex, academic degree, shift, job position, work seniority, area of specialization, and specialized clinic to which they belonged. Then, the APN competencies were estimated through mean scores to determine the most and least developed competencies. The competencies were also analyzed by specialized clinic to determine

which clinic had the most APN competencies. Then the sample was separated into 2 groups: 1 - 15 years and 16 - 30 years of work seniority to estimate their APN competencies. Finally, APN competencies were analyzed according to academic level dividing the sample into 2 groups: postgraduate/master's degree and technician/bachelor's degree. It should be noted that this instrument does not have a cut-off point; consequently, the competencies were estimated through mean scores; the higher the score, the higher the competency, and vice versa.

This work was approved by the Ethics and Research Committee of the Hospital Gral. Dr. Manuel Gea González, registration number: 42-99-2022. All procedures complied with the provisions of the regulations of the General Health Law on health research in force. Participants were informed of the implications of the study through signed consent. A privacy notice protects all data.

Results

Information was collected from 28 professionals, with a mean age of 35.7 years (SD: 7.39 [SD: standard deviation]). The mean number of years of work experience was 14 (SD: 8.56). Regarding sex, 78.6 % were women, and 21.4 % were men. Of these professionals, 57.1 % belonged to the morning shift, 17.9 % to the night shift, 14.3 % to the afternoon shift and 10.7 % to the special shift.

Concerning academic level, 35.7% have a bachelor's degree as their highest level of education, 28.6% have a master's degree, 21.4% have a postgraduate/specialty degree and 14.3% have a technical nursing degree.

As for the area of specialization of these professionals, 25% have a specialty/master's degree/diploma in wounds and stomas, 10.7% a specialty in nephrology, 7.1% in palliative care, 7.1% in geriatrics, 3.6% in mental health, 3.6% in critical care, 21.4% a diploma in infusion therapy and 21.4% no specialization at all (Table 1).

Table 1. Description of the sample (n=28)

	Mean (SD)
Age (years)	35,71 (7,39)
Work experience (years)	14,04 (8,56)
% (#)	
Sex	
Mujer	78, (22)
Hombre	21,4 (6)
Total	28
Shift	
Morning	57,1 (16)
Afternoon	14,3 (4)
Night	17,9 (5)
Special	10,7 (3)
Total	28
Specialized clinic	
Infusion therapy	21 (6)
Pain and palliative care	7 (2)
Gerontogeriatrics	7 (2)
Skin care and prevention of dependency injuries	29 (8)
Wounds and stomata	7 (2)
Renal replacement	29 (8)
Total	28
Academic level	
Technician	14,3 (4)
Bachelor's Degree	35,7 (10)
Specialty/postgraduate degree	21,4 (6)
Master's Degree	28,6 (8)
Total	28
Areas of specialization	
Infusion therapy	21,4 (6)
Wounds and stomata	25 (7)
Geriatrics/gerontology	7,1 (2)
Nephrology	10,7 (3)
Critical care	3,6 (1)
Palliative care/tanatology	7,1 (2)
Teaching	3,6 (1)
None	21,4 (6)
Total	28

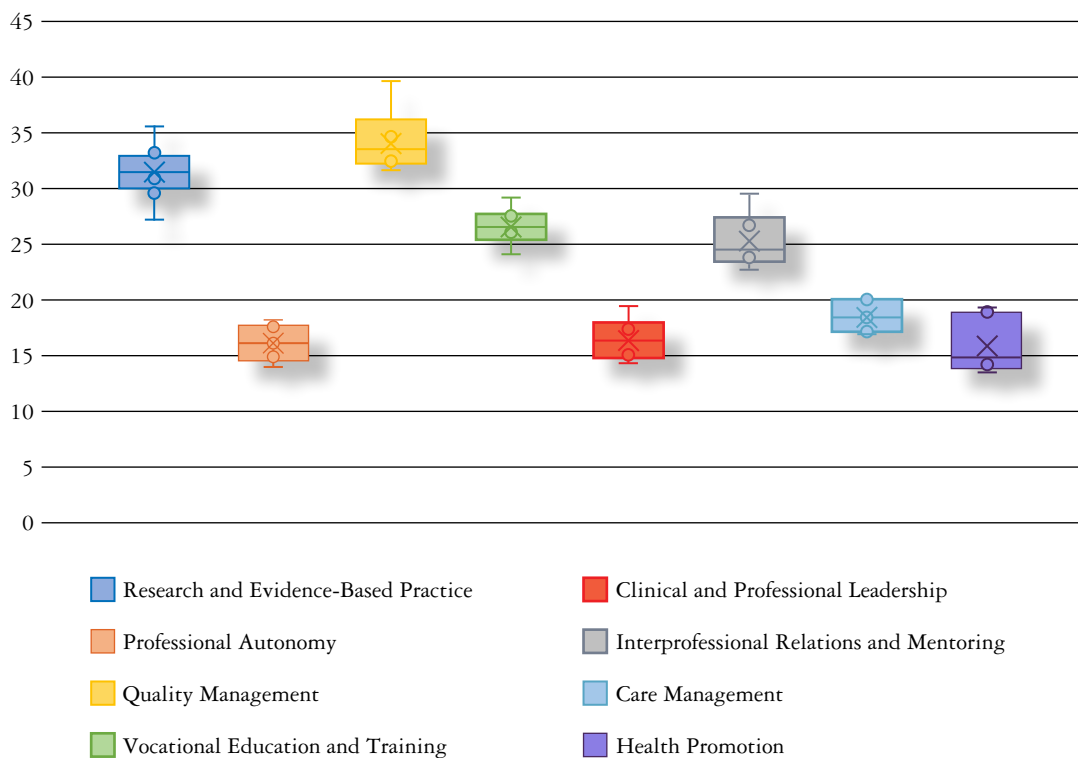
*SD: standard deviation

In terms of APN competencies, professional autonomy (mean=32.57) and research and evidence-based practice (mean=30.03) were the most developed competencies, clinical and professional leadership (mean=14.92) and health promotion (mean=15.17) the least developed (Table 2) (Figure 1).

Table 2. Mean scores for advanced practice nursing competencies of practitioners in specialty care clinics

	Research and evidence-based practice	Clinical and professional leadership	Professional autonomy	Interprofessional relations and mentoring	Quality management	Care management	Vocational education and training	Health promotion
	n=28	n=28	n=28	n=28	n=28	n=28	n=28	n=28
Media	30,03	14,92	32,57	26,03	15,67	24,17	17,85	15,17
Median	32	16	34	27	16	24	19	15,5

Figure 1. Mean scores for advanced practice nursing competencies of professionals in specialty care clinics



The specialty care clinic with the most APN, pain and palliative care competencies: research and evidence-based practice (mean=36), clinical and professional leadership (mean=17.50), professional autonomy (39.50),

interprofessional relations and mentoring (mean=29), quality management (mean=19), care management (mean=29, 50), professional teaching and education (mean=20), health promotion (mean=19) (Table 3).

Table 3. Mean advanced practice nursing competency scores by Specialty Care Clinic

	n	Research and evidence-based practice	Clinical and professional leadership	Professional autonomy	Interprofessional relations and mentoring	Quality management	Care management	Vocational education and training	Health promotion
		\bar{x}	\bar{x}	\bar{x}	\bar{x}	\bar{x}	\bar{x}	\bar{x}	\bar{x}
Infusion therapy	6	31,66	16,33	32,66	26,33	17,66	25	18	14,83
Pain and palliative care	2	36	17,5	39,5	29	19	29,5	20	19
Gerontogeriatrics	2	33	18	35	27,5	17,5	27	20	19,5
Wounds and stomata	2	29,5	16	35,5	23,5	15	24,5	17	13,5
Skin care and prevention of dependency injuries	8	27,5	14,75	31,5	26,37	15,12	22,75	16,75	14,25
Renal replacement	7	31	13,57	32,71	26,84	14,14	24	18,42	14,85

At the academic level, staff who had postgraduate and master's degrees (n=14) presented higher mean scores in most of the APN competencies: evidence-based research and practice (30.42), professional autonomy (33.50), care management (24.85), professional teaching and education (18.21),

health promotion (15.57). This includes staff having technical and bachelor level (n=14): evidence-based research and practice (29.64), professional autonomy (31.64), care management (23.50), professional teaching and education (17.50), health promotion (14.78) (Table 4).

Table 4. Mean scores for advanced practice nursing competencies by academic level

Academic level	n	Research and evidence-based practice		Clinical and professional leadership		Professional autonomy		Interprofessional relations and mentoring		Quality management		Care management		Vocational education and training		Health promotion	
		\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	DE
Technical/ bachelor's degree	14	29,64	6,89	15,42	3,89	31,64	5,69	26,21	3,37	15,85	3,27	23,5	3,13	17,5	2,17	14,78	2,99
Postgraduate/ master's degree	14	30,42	6,46	14,42	5,15	35,5	7,26	25,85	4,24	15,5	3,95	24,85	4,43	18,21	2,77	15,57	3,75

In professional experience, personnel who had between 1 and 15 years of nursing practice (n=18) presented the highest scores in the different dimensions: research and evidence-based practice (mean=32.38), clinical and professional leadership (mean=15.94), professional autonomy (mean=34.44), interprofessional relations and mentoring (mean=27.38), quality management (16.55), care management (mean=25.33), professional teaching and education (mean=18.72), health

promotion (mean=16.11) concerning staff with 16 to 30 years of nursing practice (n=10) this includes: research and evidence-based practice (mean=25.80), clinical and professional leadership (mean=13.10), professional autonomy (mean=29.20), interprofessional relations and mentoring (mean=23.60), quality management (mean=14.10), care management (mean=22.10), professional teaching and education (mean=16.30), health promotion (mean=13.50) (Table 5).

Table 5. Average advanced practice nursing competency scores by years of work experience

Years of work experience	n	Research and evidence-based practice		Clinical and professional leadership		Professional autonomy		Interprofessional relations and mentoring		Quality management		Care management		Vocational education and training		Health promotion	
		\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
1-15 years	18	32,38	4,97	15,94	4,26	34,44	5,56	27,38	3,14	16,55	3,58	25,33	3,86	18,72	1,84	16,11	2,92
16-30 years	10	25,8	7,19	13,1	4,58	29,2	6,89	23,6	3,68	14,1	3,1	22,1	2,88	16,3	2,79	13,5	3,56

Discussion

Over the years, APN profiles have been identified and differentiated in several countries through various measurement instruments¹⁷, such is the case of the work of Gardner¹³ *et al*, Mick and Ackerman¹⁴ in which the main APN activities were identified and the role of APNs was differentiated respectively. With our article, we identify to what extent the surveyed nurses carry out APN activities. In addition, it will allow us to recognize them through this profile.

On the other hand, análisis, such as that of Bautista's,¹⁵ show that nurses with a higher academic level (master's/specialty/doctorate) obtained higher mean scores in each dimensión.

Their skills include research and evidence-based practice (21.5, clinical and professional leadership (12.5), professional autonomy (25), interprofessional relations and mentoring (22.3), quality management (13.4), care management (19.8), teaching and professional education (17.5) and health promotion (14.1). This was compared to the skills of those with a diploma/graduate degree: research and evidence-based practice (20.3) clinical and professional leadership (9.9), professional autonomy (25.7), interprofessional relations and mentoring (21.8), quality management (12), care management (19.4); teaching and professional education (16.4) and health promotion (13.6). In our study group, nurses with higher academic level (master's/specialty) obtained the highest

scores: this included research and evidence-based practice (30.42), clinical and professional leadership (15.42), professional autonomy (33.50), interprofessional relations and mentoring (26.21), quality management (15.85), care management (24.85), professional teaching and education (18.21), health promotion (15.57); concerning staff having a technical and bachelor's level (14): research and evidence-based practice (29.64), clinical and professional leadership (14.42), professional autonomy (31.64), interprofessional relations and mentoring (25.85), quality management (15.50), care management (23.50), professional teaching and education (17.50), health promotion (14.78).

Conclusion

This research presents a step forward for the implementation of APNs in our institution since it has provided us with the evidence of the necessity of nursing professionals to specialize to acquire or enhance their clinical caring and APN competencies. Likewise, we will be able to plan and carry out strategies aimed at strengthening and enhancing all their competencies, to form the first APNC in Mexico, to be a national reference, and to increase the existing information on APN in Latin America.

According to the findings, not all the professionals in these clinics are APNs, since the ICN recommends a postgraduate/master's degree as the academic level to perform this role.¹⁸ Consequently, it is essential to strengthen them with nursing professionals who have the academic level, professional experience, and precise competencies to enable them to develop the APN. Accordingly, future research will be able to measure the impact that these nurses have on the patient, family, institution, and health system.

Nurses with higher academic levels were found to possess more APN competencies; however, even though professional experience is an important component of APN, nurses with more years of practice were not found to possess more competencies than nurses with less experience.

Similarly, it is important to mention that the evaluation instrument used for this study is valid and reliable; however, one of the difficulties faced is that, although in Mexico we have a competency framework, there is no validated instrument or one adapted to the Mexican context that identifies APN competencies; therefore, it is essential to design and validate an instrument that meets this objective.

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