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Delphi survey on the application of advanced practice nursing competencies: Strong points and unfinished business in cancer care

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Abstract

Aim: This study assessed the application of advanced practice nursing competencies in cancer care to identify obstacles to their full implementation.

Background: Internationally, the implementation of advanced practice nursing roles depends on the context and environment, which shape the definition, scope and competencies associated with these roles.

Methods: Nurses participated in two rounds of an online Delphi survey about the competencies of advanced practice oncology nurses. The threshold for expert consensus was set at 75%.

Results: Eleven competency domains were proposed; all yielded consensus of over 75%. However, for 57.8% of the specific competencies proposed in round 1 and for 62.2% in round 2, there was no consensus on which were applied in practice. There was more agreement on the competencies applied in the domains of direct clinical practice, consultation and collaboration and interprofessional relations than in dimensions such as health care promotion, quality improvement, evidence-based practice and research. Barriers related to unimplemented competencies were identified.

Conclusions: The competencies applied in advanced practice nursing reflect incomplete development of these roles. Domains related to direct clinical practice, consultation and collaboration and interprofessional relations are relatively well developed, whereas those related to leadership, research, evidence-based practice and quality improvement are not. The identified barriers hindering implementation of some competencies can inform strategies to develop this role in cancer care.

Implications for Nursing Management: Hospital administrators and nurse managers should reflect and be mindful of the development of advanced practice nurse (APN) competencies along with the challenges associated with implementing advanced practice roles.

KEYWORDS
advanced practice nursing, clinical competencies, Delphi technique, nurses role, oncology nursing

1 | BACKGROUND

The professional role of the advanced practice nurse (APN) has emerged as an innovative solution to health care needs, providing a high degree of knowledge, expertise and autonomy in patient care (Hutchinson et al., 2014; Krishnasamy et al., 2021; Sánchez-Gómez et al., 2019). At the international level, implementation and regulation are uneven: in some countries, these roles have been established for decades, while in others, implementation has not yet reached its optimal level (Carney, 2016; Schönenberger et al., 2020; Westman et al., 2019).

Nurses are well placed to contribute to reducing the burden of cancer across the entire care pathway (Yates et al., 2021). Oncology APNs have the skills to respond to patients' needs at different stages of the disease. Through their functional roles as expert clinicians and researchers, APNs support evidence-based best practice within multidisciplinary teams (Baileys et al., 2018; Coombs et al., 2020), contributing to improvements in patients' quality of life and satisfaction as well as in clinical outcomes sensitive to nursing practice (Alessy et al., 2021; Cook et al., 2017; Keer et al., 2021).

In defining the concept and nature of advanced practice nursing, different authors have developed numerous theoretical approaches and models, including Hamric's Integrative Model of Advanced Practice Nursing (Hamric, 2014), Fenton's and Brykczynski's Expert Practice Domains of the Clinical Nurse Specialist and Nurse Practitioner and the Strong Memorial Hospital's Model of Advanced Practice Nursing (Spross, 2014).

Likewise, different scientific societies, such as the International Council of Nurses (ICN, 2020), the American Nurses Association (ANA, 2008), the Canadian Nurses Association (2019), the Royal College of Nursing (2018) and the Australian College of Nursing (Australian Nursing and Midwifery Accreditation Council, 2015) have developed specific competency frameworks and standards for advanced practice nursing. However, there is no global consensus on the definition of roles and nomenclature around this field. Rather, the APN's scope of practice is largely determined and conditioned by the environment in which they practice (Casey et al., 2019; Dowling et al., 2013; Jokiniemi et al., 2012).

Despite longstanding and other more recent experiences, the competencies associated with these roles and their level of implementation are diverse. Studies analysing APN competencies in different environments have observed more similarities than differences (Heinen et al., 2019; Hutchinson et al., 2014; Jean et al., 2019; Jokiniemi et al., 2021; Ryder et al., 2019). In general, these authors signal the need to develop specific instruments to evaluate APN competencies, to identify their roles in practice and to agree on the definition of competencies in order to enable quality assessment and compare different settings (Hutchinson et al., 2014; Jokiniemi et al., 2021; Sastre-Fullana et al., 2014).

Establishing a competency framework for APNs is crucial for ensuring that operational planning, education and professional development are optimal and in alignment with health system and patient needs (Dowling et al., 2013; Gardner et al., 2013; Jokiniemi et al., 2020). Studying the implementation of competencies in advanced practice roles and contexts can deepen our understanding of the role, define it more clearly, improve clinical outcomes and contribute to promoting nursing practice and the quality of nursing care (Jean et al., 2019; Jokiniemi et al., 2021; Sastre-Fullana et al., 2015). This aspect is relevant when crafting job descriptions, professional performance evaluations, clinical certification, and competency and education evaluation programmes (Burke et al., 2017; Sastre-Fullana et al., 2017).

Identifying advanced practice nursing and analysing its functions can inform an array of complementary processes, including APN recruitment and education (Gardner et al., 2016; Sevilla Guerra et al., 2021). The insight gained can also lay the foundation for developing health policies that integrate advanced practice nursing as a core asset to the health system, designing policies that set out the career paths available to these professionals and optimizing nursing resources (Jokiniemi et al., 2020; Sevilla Guerra et al., 2021).

On the other hand, Heale and Rieck Buckley (2015) emphasize the need to regulate advanced practice according to educational standards and certification, guaranteeing the full development of advanced practice and in turn ensuring good patient outcomes. In the field of oncology, the Oncology Nurse Society (Oncology Nursing Society (ONS), 2019), the Canadian Association of Nurses in Oncology (Canadian Association of Nurses in Oncology (CANO/ACIO), 2001) and the European Oncology Nursing Society (European Oncology Nursing Society (EONS), 2018) have published educational curricula, practice standards and nursing competencies according to the different professional roles performed. Oncology APNs are nested within multidisciplinary teams, and they specialize in cancer prevention and screening, genetic counselling, and case management. They also have a role in process coordination, teaching, guidance and surveillance, and they may also be the key nurse for symptoms management.

In Spain, advanced practice roles have been deployed under various names, such as case managers and clinical nurses in cancer or chronicity, and they adapt their practice to health system and patient needs (Lafuente-Robles et al., 2019; Sastre-Fullana et al., 2014). In Andalusia, the role of APNs in complex oncological processes has been recognized since 2018 (Junta de Andalucia, 2018), and in Catalonia, it is integrated into the most recent strategic lines and objectives of the Cancer Control Plan 2015–2020 (Pla Director d'Oncologia, 2015). Nevertheless, despite the implementation of advanced practice roles in Spain, the

functions performed by APNs are not regulated at a legal or professional level (Sevilla Guerra et al., 2018).

Studies in Spain have identified advanced practice roles and competencies, describing development that stops short of the full scope of practice (Gutiérrez Martí & Ferrús Estopà, 2019; Gutiérrez-Rodríguez et al., 2019; Sevilla Guerra et al., 2018). This situation increases the interest in exploring advanced practice from the perspective of the nurses who practice this role. Thus, the aim of this study was to elicit the perspective of oncology APNs on the level of implementation of the core competencies and the obstacles that hinder it, identifying areas of consensus through a Delphi survey.

2 | METHODS

2.1 | Study design

We applied the Delphi method to reach a consensus among experts through an iterative, two-round process with an expert panel (Keeney et al., 2011; McKenna & Keeney, 2008).

The process began with a proposed list of topics for discussion, obtained from a review to identify competencies of oncology APNs. The list of competencies was based on the competency models for advanced practice oncology nurses defined and published by the Oncology Nurse Society (ONS, 2019), the Canadian Association of Nurses in Oncology (CANO/ACIO, 2001) and the European Oncology Nursing Society (EONS, 2018). Hamric's Model of Advanced Nursing Practice was used as a theoretical framework (Hamric, 2014). A review of the domains and nursing competencies of advanced practice yielded an initial total of 90 competencies, organized under 11 competency domains: (1) direct clinical practice; (2) health promotion; (3) education; (4) consultation; (5) evidence-based practice; (6) clinical and professional leadership; (7) collaboration and interprofessional relations; (8) ethical decision-making; (9) quality improvement; (10) professional development; and (11) research.

2.2 | Panel of experts

Delphi participants comprise a panel of experts on the topic under study (Keeney et al., 2011; McKenna & Keeney, 2008). In our study, panel members were selected based on their expertise and/or experience in advanced practice nursing, ensuring that different perspectives were represented (Landeta, 2006). Both clinical and academic spheres were taken into consideration. The panel included (1) people with extensive knowledge of the application of advanced practice nursing due to their studies and research activity in the field; (2) directors and managers with experience developing APN profiles or managing these professionals in the field of oncology at their hospitals; and (3) nursing professionals with experience as recognized oncology APNs at their hospital.

Although the literature provides no clear guidelines with respect to the ideal number of Delphi panel members, some recommendations suggest a sample of 20 to 50 participants (Endacott et al., 1999; McKenna & Keeney, 2008). Given the content under study, the degree of uncertainty and dispute in the literature, and the available resources (Coleman et al., 2013; Keeney et al., 2011), we decided that our study needed an expert panel of at least 30 nurses.

2.3 | Consensus

The researchers established a pre-defined minimum level of consensus of 75%, in line with the study objectives, available resources and the anticipated responses (Keeney et al., 2011; Mcilfatrick & Keeney, 2003). In other words, 75% of the participants had to agree on the statements evaluated (Keeney et al., 2011; McKenna & Keeney, 2008). The competencies that obtained this level of consensus in round 1 were included, unchanged, in the round 2 questionnaire.

2.4 | Information collection

The study included professionals from hospitals in Catalonia (Spain) with oncology or haematological oncology services. The nursing directors were contacted by telephone or email to explain the project and inquire whether the hospital had implemented advanced practice oncology roles. Once this was confirmed, they provided the emails of APN managers and APNs who might be interested in taking part. The participants were contacted by email with a description of the study, a formal invitation to participate and an informed consent form with specific details. Selected participants who gave their consent were sent a link to the first questionnaire.

This Delphi study was restricted to two rounds, as the literature indicates that participants tire of the process after three rounds (Keeney et al., 2011; Walker & Selfe, 1996).

2.5 | Questionnaires

An online questionnaire was used to collect the study data, allowing investigators to easily monitor and analyse the data and participants to maintain their anonymity. The panel members did provide some personal details, including their age, sex, level of education, professional experience and field of work.

The first questionnaire, distributed from March to June 2020, identified the domains of advanced practice and the specific competencies. The items probed whether the different competency domains applied to the APN role, whether APNs used the specific competencies in practice, and if not, whether this would be appropriate. An open question asked panel members to identify the factors required to develop the competencies that participants had stated were not routinely applied. The questionnaire was piloted by eight professionals who were experts on the subject prior to the start of the first round and subsequently adapted based on the responses and feedback.

The second questionnaire was drafted based on the responses to the first, with the aim of establishing consensus in terms of which competencies were applied by APNs. It was circulated in September 2020 to the participants who had completed the first questionnaire.

2.6 | Data analysis

A descriptive analysis of the study variables was conducted. The questionnaires were analysed separately, and SPSS software (version 19.0) was used for the quantitative analyses. In the case of open questions, content analysis was carried out.

2.7 | Ethical considerations

The directors of participating hospitals and the Ethics Committee of the Hospital Universitari de Bellvitge approved the protocol (PR277/18). The study complied with the bioethical regulations (Declaration of Helsinki, 2013) and applicable legislation, including Organic Law 3/2018 on Personal Data Protection and Guaranteeing Digital Rights, and EU Regulation 2016/679 on General Data Protection.

3 | RESULTS

3.1 | Response rate

In the first round, 42 nursing professionals responded (70% of the 60 questionnaires sent out). In the second round, 33 of these panel members (78.6%) contributed; participant characteristics were similar in the two rounds, with no significant differences in demographic or professional characteristics.

Table 1 shows panel members' characteristics. Their mean age was 46.6 years in round 1; and 46.7 years in round 2; all the professionals in the sample were women. Over 90% worked in a hospital, while the rest worked in the academic field. The professional profile in round 1 was female nurses aged 35 to 49 years old (59.53%), with over 20 years' professional experience (59.5%) and a master's degree (61.9%). Most (83.3%) were oncology APNs, and 68.5% had more than 5 years' experience. Just over half (52.4%) worked in a specialist cancer hospital. The study covered the provinces of Barcelona, Girona

TABLE 1 Characteristics of Delphi panel members

Variables		Round 1 ($N = 42$) *n* (%)	Round 2 ($N = 33$) *n* (%)
Age	21–34 years	3 (7.1)	2 (6.1)
	35–49 years	25 (59.5)	21 (63.6)
	50–65 years	13 (31.0)	9 (27.3)
	>65 years	1 (2.4)	1 (3.0)
Professional experience	5–10 years	5 (11.9)	3 (9.1)
	10–20 years	12 (28.6)	10 (30.3)
	>20 years	25 (59.5)	20 (60.6)
Level of studies	PhD	4 (9.5)	4 (12.1)
	PhD candidate	2 (4.8)	2 (6.1)
	Master	26 (61.9)	20 (60.6)
	Postgraduate or other	10 (23.8)	7 (21.2)
Professional profile	Nurse teacher (academic)	1 (2.4)	1 (3.0)
	Research nurse	2 (4.8)	2 (6.1)
	Advanced practice nurse	35 (83.3)	28 (84.8)
	Nurse manager	4 (9.5)	2 (6.1)
Work centre	Hospital with <500 beds	6 (14.3)	3 (9.1)
	Hospital with ≥500 beds	11 (26.2)	9 (27.3)
	Comprehensive Cancer Centre	22 (52.4)	18 (54.6)
	University	3 (7.1)	3 (9.1)
Experience as an APN[a]	<3 years	6 (17.2)	3 (10.7)
	3–5 years	5 (14.8)	4 (14.2)
	>5 years	24 (68.5)	21 (75.0)

[a]$N = 35$ advanced practice nurses (APNs) were among the participants in round 1, and $N = 28$ in round 2.

TABLE 2 Degree of consensus on the definition of competency domains and on the competencies to be developed

Competency domain and specific competencies	Round 1 $n = 42$	Round 2 $n = 33$	Must be developed
1. DIRECT CLINICAL PRACTICE			
Competency domain is part of APN role	95.2	100	–
Provide direct care to the patient and family	100	100	–
Demonstrate experience in cancer prevention and detection	64.3	–	100
Perform clinical practice autonomously	83.3	81.8	–
Demonstrate a high degree of knowledge of the oncological process and the needs of cancer patients	92.9	97	–
Develop and implement suitable treatment for complex cancer patients	73.8	–	81.8
Act as an expert clinician (clinical judgement)	71.4	–	100
Adopt a holistic perspective in nursing practice	97.6	97	–
Apply critical thinking in decision-making in complicated, unforeseen and dynamic situations	88.1	81.8	–
Apply reflective practice	76.2	78.8	–
Use evidence-based knowledge in the planning and implementation of nursing care	83.3	84.8	–
Coordinate the patient care process and mobilize resources to give the patient comprehensive care	88.1	93.9	–
Develop assessment strategies to evaluate the needs of the patient, family, and population	97.6	90.9	–
Monitor, evaluate and analyse the results of their interventions	57.1	–	100
Participate in clinical trials or studies for specific research	71.4	–	100
Perform different types of nursing care: Coaching, consultation, mentoring, collaboration	52.4	–	95
Provide care to treat the psychosocial needs of cancer patients	92.9	87.9	–
Demonstrate the capacity to anticipate, manage and respond to a wide range of real or potential health problems that the patients may develop	90.5	93.9	–
Plan the objectives and the care plan in collaboration with the patient and their family	85.7	90.9	–
2. HEALTH PROMOTION			
Competency domain is part of APN role	95	87.9	–
Strive to empower people, groups and communities to adopt health lifestyles and self-care habits	73.8	–	100
Identify the needs of people, groups and communities for whom specific measures can be taken with respect to health promotion and cancer prevention	66.7	–	100
Participate in the evaluation of the results of different healthcare promotion programmes	31	–	96.5
3. EDUCATION			
Competency domain is part of APN role	100	97	–
Evaluate the educational needs of the population	31	–	89.6

(Continues)

TABLE 2 (Continued)

Competency domain and specific competencies	Round 1 $n = 42$	Round 2 $n = 33$	Must be developed
Identify the educational needs of patients, students, nurses and other professionals	69	—	84.6
Plan, coordinate and run educational programmes based on the needs detected	47.6	—	100
Implement specific educational programmes	54.8	—	100
Provide health education to the patient and family directly	90.5	100	—
Participate as a teacher on specific courses and official undergraduate and postgraduate study programmes	71.4	—	100
Monitor, evaluate and record the results of the different educational programmes and initiatives run	33.3	—	96.4
Tutor healthcare workers, university students and other people to acquire new knowledge and skills to help them in their professional practice	76.2	87.9	—
Promote the capacity of patients, relatives and communities to participate in making decisions related to the healthcare process and health needs, in accordance with the preferences of the patient, family and/or communities and the resources available	81	75.8	—
Have skills to guide and teach throughout the implementation of treatment and patient care, to the patient, family and the profession itself	90.5	93.9	—
4. CONSULTATION			
Competency domain is part of APN role	97.6	97	—
Provide consultation services in relation to clinical practice, theoretical knowledge and evidence-based practice	90.5	75.8	—
Respond to specific enquiries about complex care of cancer patients	92.9	84.8	—
Respond to specific enquiries related to the patients' oncological process	97.6	93.9	—
Respond to specific enquiries related to the patients' care	100	97	—
Provide clinical and expert administrative consultation	85.7	90.9	—
Make contributions for recommendations adapted to the patients' needs and personalized consultation	97.6	97	—
5. EVIDENCE-BASED PRACTICE			
Competency domain is part of APN role	97.6	100	—
Promote the development of evidence-based practice in the care of the patient, family, community and the population in general	78.6	72.7	100
Actively search for and participate in reviews of current evidence in relation to practice	54.8	—	100
Continuously incorporate changes in the best practices	76.2	60.6	100
Identify areas of practice in which there is a lack of evidence and knowledge	73.8	—	100
Participate in drafting and revising clinical practice guidelines related to healthcare practice	78.6	63.6	100

(Continues)

TABLE 2 (Continued)

Competency domain and specific competencies	Round 1 $n = 42$	Round 2 $n = 33$	Must be developed
Disseminate new evidence throughout teams and institutions	73.8	—	100
6. CLINICAL AND PROFESSIONAL LEADERSHIP			
Competency domain is part of APN role	97.6	97	—
Have a vision for oncological nursing practice and patient care and are able to articulate and implement this vision	81	81.8	—
Participate and lead the development and implementation of good care practices, clinical practice guidelines and protocols.	78.6	57.6	100
Develop negotiation and influencing skills for implementing and improving nursing practice	64.3	—	100
Identify needs for change based on the assessment of the patients' needs, generating innovative practices and redesigning solutions to improve the response to the patients' needs and the care provided	69	—	80
Apply practices and roles in line with the patients' health needs based on epidemiological, health, social, legal, political, ethical, professionals and development changes	59.5	—	94.1
Provide leadership in multidisciplinary committees or in the profession itself with respect to the development, implementation and evaluation of policies, procedures, education, research, quality initiatives and clinical practice	45.2	—	100
Work proactively at professional, institutional and systemic level, developing new collaborations and networks of influence for improving the provision of cancer care in healthcare systems	40.5	—	96
Strive to improve the access, quality and cost-effectiveness of healthcare	61.9	—	93.8
7. COLLABORATION AND INTERPROFESSIONAL RELATIONS			
Competency domain is part of APN role	97.6	100	—
Work with the multidisciplinary team to provide comprehensive care to the patient, family and community	100	90.9	—
Work with the patients, families and carers throughout the continuum of care	95.2	93.9	—
Identify potential barriers that may pose an obstacle to collaboration	97.6	93.9	—
Develop and foster collaborative relations with the community and the healthcare system	66.7	—	100
Act as a mediator between the different professionals involved in the healthcare provided	92.9	87.9	—
Improve coordination between the different levels of healthcare	88.1	84.8	—
Provide support in the design and implementation of new healthcare policies	42.9	—	84.6
Reinforce cohesion and communication within the healthcare team	85.7	87.9	—
Balance the workloads evenly	57.1	—	88.8
Optimize referrals to other professionals.	90.5	97	—

(Continues)

TABLE 2 (Continued)

Competency domain and specific competencies	Round 1 $n = 42$	Round 2 $n = 33$	Must be developed
Organize and ensure the monitoring of healthcare processes	92.9	90.9	—
8. ETHICAL DECISION-MAKING			
Competency domain is part of APN role	95.2	97	—
Participate in sessions to identify and provide support for the discussion of moral and ethical issues or problems	61.9	—	93.8
Provide leadership in multidisciplinary teams that deal with any ethical or moral disputes that may arise over the course of the process of the illness	47.6	—	95.5
Respect the choices of individuals, providing care without judgement or prejudice, upholding the patients' rights, decisions, autonomy and cultural and spiritual beliefs.	88.1	93.9	—
Foster discussion on advanced care planning at an individual and systemic level	64.3	—	100
Identify, articulate, and actively participate in the ethical matters of the patient, family, professionals, organization and the community and even at a political level	50	—	90.4
9. QUALITY IMPROVEMENT			
Competency domain is part of APN role	97.6	97	—
Develop strategies, projects, and activities, monitoring and improving the quality and efficacy of care	64.3	—	100
Anticipate the variability of clinical practice and are proactive in implementing interventions that guarantee quality	71.4	—	100
Promote improvement in terms of practice and health outcomes in accordance with national and international standards by initiating, facilitating, disseminating and leading changes at an individual, team, organisational and systemic level	45.2	—	100
Continuously evaluate research results and apply them to improve practice	38.1	—	100
Plan and measure opportunities to generate and apply knowledge to practice in processes that can be measured or assessed	33.3	—	100
Consider the perspective of the cost-effectiveness of the patient, team, organization and system when making decisions and use suitable strategies for improving efficacy and efficiency	42.9	—	91.6
10. PROFESSIONAL DEVELOPMENT			
Competency domain is part of APN role	90.5	100	—
Actively search for and participate in reviews of current evidence in relation to practice	71.4	—	91.6
Take responsibility for a lifelong learning process for their own professional development and maintaining their professional competencies	92.9	87.9	—
Have communication skills and contribute towards the development of the work in the areas of practice with publications and the	71.4	—	100

(Continues)

TABLE 2 (Continued)

Competency domain and specific competencies	Round 1 $n = 42$	Round 2 $n = 33$	Must be developed
dissemination of their work through presentations at conferences and articles in professional journals			
Disseminate nursing knowledge and research through presentations or publications at a national and international level	59.5	—	100
Participate in collaborative projects with academic institutions	54.8	—	89.5
Participate in continuous reflective practices to improve competency and professional growth	42.9	—	95.8
Take part in continuous training activities and actively participate in professional and specialist nursing organisations/societies	59.5	—	94.1
Perform their duties in accordance with the legal and ethical guidelines established by the regulatory body of the profession.	76.2	81.8	—
Demonstrate an understanding or the legislative and sociopolitical issues that affect decision-making and develop strategies to influence the health results and healthcare policies	59.5	—	82.4
11. RESEARCH			
Competency domain is part of APN role	88.1	97	—
Consistently apply research in the care of cancer patients and the family	64.3	—	93.3
Evaluate clinical practice taking the most recent research findings into account	54.8	—	100
Identify and participate in research on relevant issues in relation to caring for cancer patients as a lead researcher or in collaboration with other members of the healthcare team	57.1	—	94.4
Participate in reviewing research proposals	40.5	—	100
Identify and put forward priority proposals for nursing research in their areas of professional practice	54.8	—	100
Act as a resource for other nurses	71.4	—	100
Interpret and disseminate relevant research results and link them to clinical practice	52.4	—	95.0
Coordinate clinical research projects as a research expert	23.8	—	96.9

and Tarragona. All APNs stated that they worked in multidisciplinary teams. Participants in round 2 showed a similar professional profile (Table 1).

3.2 | Results of the first round

Table 2 shows the results with respect to the 11 proposed competency domains. The consensus achieved regarding the pertinence of these domains to the APN role ranged from 88% to 100%. With respect to the specific competencies performed by oncology APNs, panel members did not reach an acceptable consensus for 52 out of 90 competencies (57.8%) in round 1 (Table 2).

The APN competencies attracting the most agreement fell under the domains of direct clinical practice, consultation and collaboration and interprofessional relations. Meanwhile, none of the competencies pertaining to health promotion, quality improvement or research reached the minimum level of consensus. On the other hand, there was a good level of agreement (81.8% to 100%) that these 52 competencies should be part of the APN's role (Table 2).

3.3 | Results of the second round

In the second round, the consensus on the definition of the 11 competency domains remained over 87% in all cases (Table 2). Of the 38 specific competencies that met the threshold for consensus in the first round, four competencies (10.5%) did not reach a consensus of 75% in the second. Three of these belonged to the domain of evidence-based practice, and the remaining one was classified under the domain of clinical and professional leadership (Table 2). All panel members agreed that these four competencies should be part of the APN role (Table 2).

TABLE 3 Determinants of competency development among advanced practice nurses in oncology, according to Delphi panel members ($N = 151$ responses)

Determinants related to competency development, *n* (%) responses
Resources, 9 responses (5.9%) Material and financial resources; access to scientific articles, databases ***Associated competency domains***: Direct clinical practice; education; evidence-based practice; quality improvement; professional development
Nursing knowledge, 12 responses (8.0%) Knowledge exchange, networks, forums; research expertise; multidisciplinary clinical nursing sessions; coordination with universities and schools; methodologies for reviewing evidence and drafting clinical practice guidelines ***Associated competency domains***: Direct clinical practice; education; evidence-based practice; ethical decision-making; quality improvement; professional development; research
Education, 44 responses (29.1%) Education; specific education related to the different domains; PhD-level education ***Associated competency domains***: Direct clinical practice; healthcare promotion; education; consultation; evidence-based practice; clinical and professional leadership; collaboration and interprofessional relations; ethical decision-making; quality improvement; professional development; research
Leadership, 18 responses (11.9%) Empowerment; autonomy in decision-making and recognition of nursing professionals; leadership capacity; positions of influence for nurses in relation to healthcare policies; greater participation in decision-making; performance of nurse-led studies; greater presence in healthcare promotion programmes ***Associated competency domains***: Direct clinical practice; healthcare promotion; education; consultation; clinical and professional leadership; collaboration and interprofessional relations; ethical decision-making; quality improvement; professional development; research
Availability of time, 23 responses (15.2%) Time for research within working hours; time during patient visits; time for training; time for activities in different competency domains ***Associated competency domains***: Direct clinical practice; healthcare promotion; education; evidence-based practice; quality improvement; professional development; research
Workload, 8 responses (5.3%) Reducing workloads; balancing the workload evenly within teams; reducing the patient/nurse ratio; reducing workloads to spend more time on research ***Associated competency domains***: Direct clinical practice; healthcare promotion; education; collaboration and interprofessional relations; quality improvement; professional development; research
Community healthcare system, 15 responses (9.9%) Collaboration with primary care for health promotion; coordination within the system; improving relations between primary and hospital care; health programme ***Associated competency domains***: Direct clinical practice; healthcare promotion; education; clinical and professional leadership; collaboration and interprofessional relations
Outcomes evaluation, 9 responses (6.0%) Improving command of tools for analysing outcomes of nursing interventions; tools that enable outcomes evaluation in health programmes; data management tools for recording, monitoring, and analysing outcomes; tools for establishing and evaluating indicators; continuous evaluation of practice ***Associated competency domains***: Direct clinical practice; healthcare promotion; education; quality improvement
Development of nursing practice, 4 responses (2.6%) Treatment protocols; autonomous decision-making ***Associated competency domains***: Direct clinical practice; education
Attitudes/behaviours, 5 responses (3.3%) Perseverance; involvement and responsibility of nursing professionals ***Associated competency domains***: Education; evidence-based practice; clinical and professional leadership; professional development; research
Role of institutions, 4 responses (2.6%) Institutions' recognition of the value of APNs; maturity of the teams; institution-supported professional development and facilities ***Associated competency domains***: Education; collaboration and interprofessional relations; professional development; research

3.4 | Factors required for developing APN competencies in oncology

The open question, designed to identify the factors required for developing the competencies that did not obtain a consensus of 75%, yielded 151 responses. The domain garnering the most interest was direct practice (17.2%), followed by education (15.2%). Both the research and quality domains were highlighted in 11.3% of the responses. The domain with the fewest responses was consultation (2.0%).

The responses are grouped by topic in Table 3. Specific training as a factor required for APN competency development was mentioned in all domains and accounts for 29.1% of the responses. Reserved time to develop the competencies is mentioned in 15.2% of the responses, under seven competency domains. Another 11.9% of the responses were related to leadership, for instance, calling for autonomy in decision-making, nurses' leadership capacity and empowerment. These responses were associated with the competencies in 10 of the 11 domains. Relations with the community and between the different levels of the health care system accounted for 9.9% of the responses, while factors related to nursing knowledge were highlighted in 8.0%. Other issues mentioned included resources, workloads, nursing practice, the nurses' attitude and the role of the institutions (Table 3).

4 | DISCUSSION

The study sought to identify areas of consensus in the definition of competency domains and in the development of APN competencies in oncology, taking as a starting point the competencies defined by scientific oncology societies (CANO/ACIO, 2001; EONS, 2018; ONS, 2019) and the Hamric model (2014). In addition, we explored the difficulties in implementing the competencies that were underdeveloped.

Broad consensus was obtained in both rounds in terms of the definition of the competency domains, but with regard to the specific competencies comprised within them, the first round yielded a consensus on just 38 out of 90 competencies (42.20%) that the panel agreed were performed in practice. In the second round, the level of agreement fell further, to 34 competencies (37.77%). Despite the low level of implementation reported, panellists broadly agreed that all competencies described should be part of daily APN practice.

In general, our results indicate a limited implementation of advanced practice nursing in oncology. Although the study reflects some development of APN competencies, it is evident that this development stops short of fulfilling its full potential. These results are in line with other studies in our context (Sevilla Guerra et al., 2018, 2021). In the absence of any regulations on advanced practice in Catalonia, the initial implementation of these roles tends to be oriented more towards clinical practice than the holistic development of the full scope of practice, with the roles created in response to the needs emerging in different settings.

There was a high level of consensus around the performance of the different competencies encompassed under the domains of direct clinical practice, consultation and collaboration and interprofessional relations. These findings may be associated with the fact that APNs work in multidisciplinary teams, coordinate care processes and provide direct care to patients and families, serving as focal points for the patient and family as well as for other professionals. They also work autonomously, demonstrating in-depth knowledge about individual patients, which hones their ability to anticipate, manage and respond to patients' health problems. The competencies that did not obtain consensus in these domains were related to the monitoring and evaluation of outcomes and the performance of specific interventions such as coaching, mentoring, counselling and the balance of workloads.

Other domains in which the competencies did not reach the cut-off for consensus were health promotion, evidence-based practice, research, and quality improvement. Likewise, there was no consensus on the performance of specific competencies from other domains such as leadership or ethical decision-making, which encompass outcomes evaluation, research, participation in health policies, competencies related to the community or the population, dissemination of results and evidence review.

Sevilla Guerra et al. (2021) reported similar results, although these are not entirely comparable due to differences in the study design; in that study, advanced practice was described as focusing on the domains of planning expert care and comprehensive care. In the domains of research and evidence-based practice as well as professional leadership, a lower proportion of nurses met the standard established.

Goemaes et al. (2019) reported that nurses carried out activities mainly in the domain of the patient and family and also of the team and the health care organization. Regarding their role, APNs dedicated the most time to acting as expert clinicians and the least to exercising leadership, while they did not carry out any specific activities in the area of ethical decision-making.

Our results differ from those obtained by Jokiniemi (2018, 2021), who reported limited time spent on direct patient care or contact by APNs; in contrast, direct clinical practice was one of the most highly developed competency domains in our study.

It is difficult to specifically compare the implementation of advanced practice competencies in different settings or even countries since the tools used for its evaluation are different (Gardner et al., 2016; Jokiniemi et al., 2021). In both the study of specific advanced practice competencies and the tools to identify advanced practice, the definition of domains or spheres of competencies are different, although the definition of competencies is possibly very similar.

In our study, the need for specific education was the aspect most frequently cited in relation to underdeveloped competencies, and this was associated with all competency domains. Jean et al. (2019) highlighted the lack of a legal framework or vision of the APN role in Spain as a barrier to the development and implementation of advanced nursing practice, so regulations establishing education and certification standards would favour the full development of advanced

practice and improved health outcomes for patients (Heale & Rieck Buckley, 2015). On the other hand, the strategic, complete implementation of the APN role requires the involvement and support of the organization's managers and administrators, as well as the availability of curricula to educate and empower APNs (Dowling et al., 2013; Goemaes et al., 2019; Van Hecke et al., 2019).

Apart from education, constraints on time, space and resources were described as hampering the development of research competencies. In addition, nurses reported the need for more time for direct clinical practice, health promotion, education and teaching, and evidence-based practice, suggesting that heavy workloads prevented them from developing practice-specific competencies (Goemaes et al., 2019). This information is relevant and may be useful to managers working towards the implementation of these advanced practice roles.

Other aspects of interest were related to the generation of evidence-based knowledge and practice, the lack of coordination with universities, the educational level of nurses and the need to exchange knowledge with other oncology APNs. In Ryder's (2019) study, APNs were associated with autonomous decision-making and the exercise of leadership to improve care delivery, but the need for support from academic nurses in the area of research was also detected.

In our study, the lack of tools to evaluate both nursing practice and the outcomes of nursing interventions was linked to the development of competencies related to the quality of care and research. This finding points to the need to implement evaluation tools to better understand the impact of APN care on patients and on the health system.

At the same time, there was broad consensus on the APNs' performance of clinical leadership in terms of autonomous decision-making for the patient; however, difficulties in implementing leadership within teams, institutions and the health system reflected some lack of empowerment on the part of the nurses along with limited institutional support for the implementation of the roles, professional development and recognition of the value of oncology APNs. This translates into a restricted vision of the APN in the hospital setting and the lack of community programmes involving APNs, as well as difficulties in establishing circuits and communication between different levels of care. These findings are in line with Heinen et al. (2019) in terms of the need to develop clinical, professional and system leadership by APNs so that they can exert influence at a strategic level and share an organisational vision on quality improvement.

4.1 | Limitations

The limitations of this study reside in the research and analysis method. While the Delphi method is generally considered an effective tool for determining expert consensus, it has also been criticized for its susceptibility to various biases. A significant limitation of the Delphi technique comes from the definition of consensus itself, as there is little agreement on how best to define the term (Keeney et al., 2011; Williams & Webb, 1994). The definition of consensus is thus inherently determined—at least to some extent—by the researcher's subjective opinion. Another limitation of the study is that not all Catalan provinces were represented, as the panel included only the experts who agreed to participate. Thus, the competencies identified may not be appropriate for all regions or hospitals.

Moreover, it is unknown how many nurses work in advanced practice positions, as there is no register of this type of nurses either at a regional level in Catalonia or nationally in Spain (Sevilla Guerra et al., 2018).

In our study, and following ICN criteria with respect to training for APNs, 76.2% and 78.9% (depending on the round) of the nurses who took part in the study had at least a master's degree.

Despite providing information to panel members about the Delphi method, sending reminder emails for each round and giving feedback after the first round, the dropout rate between the first and second questionnaires was 21.4%. This is consistent with the response rates of other Delphi studies, with rates varying between 15% and 80% (Barrett et al., 2001; Mcilfatrick & Keeney, 2003).

5 | CONCLUSIONS

This study describes the scope of the competencies exercised by oncology APNs in Catalonia and identifies the competencies that still need development. Implementation of advanced practice roles in the oncology field in Catalonia is a work in progress. Domains related to direct clinical practice, consultation, and collaboration and interprofessional relations are relatively well developed, whereas leadership, research, evidence-based practice and quality improvement are not. Thus, our results indicate that APN practice in Catalonia is aligned with the ICN definition (ICN, 2020) of the clinical nurse specialist with regard to the clinical competencies performed, but not in terms of the indirect competencies associated with this role.

Obstacles to implementation were related to nurse education, leadership skills, time constraints and relationships between the different care levels of the health system and the community. Identifying these barriers can facilitate the design of strategies that allow further development of APN competencies, improved nurse education, explicit definition of professional roles and more precise job descriptions for use by nurse managers.

In terms of the development of competencies among oncology APNs, the results of this study enable further progress in integrating and standardizing the APN role in this setting. In a context with no regulations on advanced practice nursing, a better delineation of competencies can contribute to more clarity in the role and facilitate management decisions in care institutions—elements that must necessarily underpin the development of advanced practice nursing and optimal patient care in institutions delivering cancer care.

There is a need to develop a competency framework and nursing practice standards, which can lay the foundation for defining educational requirements and designing a certification system to support the implementation of advanced practice nursing. This study could be a starting point to establish such a framework. This is a very initial investigation of the competency development in oncology APNs in

Catalonia. Future studies are needed to obtain a deeper understanding of advanced practice, real-life performance of the different competencies and more specifically, the impact of settings and contexts.

6 | IMPLICATIONS FOR NURSING MANAGEMENT

The underdeveloped competencies identified in this study, together with the barriers hindering progress, should be analysed by administrators and institutions. Nurse managers should reflect and be mindful of the difficulties they may encounter when leading efforts to implement advanced practice roles. Shedding light on these challenges can enable the design of strategies that promote the development of the full scope of APN practice.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

ETHICS STATEMENT

The directors of participating hospitals and the Ethics Committee of the Hospital Universitari de Bellvitge approved the protocol (PR277/18). The study complied with the bioethical regulations (Declaration of Helsinki, 2013) and applicable legislation, including Organic Law 3/2018 on Personal Data Protection and Guaranteeing Digital Rights, and EU Regulation 2016/679 on General Data Protection.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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