International Nursing Review

WILEY

ICN International Council of Nurses The global voice of nursing

ORIGINAL ARTICLE OPEN ACCESS

Evolution and Future Prospects of Nurse Anaesthetists in Catalonia: Inception, Upskilling and Scope of Practice

Montserrat Sanclemente-Dalmau[1,2] | Esther Rubinat Arnaldo[3,4,5] | Joan Blanco-Blanco[3,4,6] | Xavier Palomar-Aumatell[7] | Guillermo Pedreira-Robles[1,2] | Paola Galbany-Estragués[8,9]

[1]Social Determinants and Health Education Research Group (SDHEd), Hospital del Mar Research Institute, Barcelona, Spain | [2]Hospital del Mar Nursing School (ESIHMar), Universitat Pompeu Fabra-affiliated, Barcelona, Spain | [3]GESEC group, Department of Nursing and Physiotherapy, Universitat de Lleida, Lleida, Spain | [4]Health Care Research Group (GRECS) Biomedical Research Institute of Lleida, IRBLleida, Lleida, Spain | [5]Center for Biomedical Research on Diabetes and Associated Metabolic Diseases (CIBERDEM), Instituto de Salud Carlos III, Barcelona, Spain | [6]CIBERFES, Centro de Investigación Biomédica en Red, Ministerio de Ciencia e Innovación, Madrid, Spain | [7]Research Group on Methodology, Methods, Models and Outcomes of Health and Social Sciences (M_3O), Faculty of Health Sciences and Welfare, Centre for Health and Social Care Research (CESS), University of Vic-Central University of Catalonia (UVIC-UCC), Barcelona, Spain | [8]Department of Fundamental and Clinical Nursing, Faculty of Nursing, University of Barcleona, Barcelona, Spain | [9]AFIN Research Group and Outreach Centre, Autnonomous University of Barcelona, Barcelona, Spain

Correspondence: Esther Rubinat Arnaldo (esther.rubinat@udl.cat)

Received: 9 December 2024 | **Accepted:** 30 May 2025

Funding: The authors received no specific funding for this work.

Keywords: competencies | healthcare team | nurse anaesthetists | qualitative research | Spain

ABSTRACT

Aim: To explore the current and future professional landscape of nurse anaesthetists within the healthcare system of Catalonia (Spain).

Background: Nurse anaesthetists have played a key role in anaesthesia administration since the 19th century. In Catalonia, they are recognised as advanced practice nurses, with an evolving competency framework designed to meet contemporary healthcare demands.

Methods: A descriptive qualitative approach was employed, with data collected through a focus group conducted in June 2021. The discussion followed a structured script addressing competency differences between nurse anaesthetists and generalist nurses, the evolution of anaesthesia nursing in the Catalan healthcare system, and its future trajectory. Discourse analysis and microanalysis of interlocutors were performed.

Findings: Twenty-one codes were identified and grouped into four main categories: 'Nurse anaesthetist profile' (competencies, care provision, health education, experience, training, humanisation, perioperative process, patient safety), 'Current professional situation' (role differentiation, institutional organisation, work intrusion), 'Factors extrinsic to the NA profession' (increased demand for anaesthetic procedures, financial interests, shortage of anaesthetists) and 'Future prospects' (growth of the profession, nursing specialty, advocacy, institutional recognition).

Discussion: This study highlights the expansion of the nurse anaesthetist role in Catalonia, driven by skill enhancement and the shortage of anaesthetists. While nurse anaesthetists advocate for greater autonomy and emphasise their contribution to patient safety, concerns persist regarding limited professional recognition and the risk of role displacement.

Abbreviations: APN, advanced practice nursE; ICN, International Council of Nurses; IFNA, International Federation of Nurse Anesthetists; NAs, nurse anaesthetists.

Conclusion and Implications for Nursing and Health Policy: The growing presence of nurse anaesthetists in Catalonia, driven by increasing procedural demand, anaesthetist shortages and nursing advancements, has led to the proposal of a collaborative model that safeguards their professional autonomy. Recognising this role, establishing clear regulatory frameworks and addressing pay disparities are essential steps towards enhancing patient care and optimising healthcare service delivery.

1 | Background

The roles and training of nurse anaesthetists (NAs) in the healthcare sector have evolved over time, shaped by various historical, social and cultural influences. Understanding how these factors have impacted the development of nursing skills is essential for conceptualising the evolution of this specialty within the current context. The integration of non-nursing roles into the field of anaesthesia nursing care, without prior nursing training, poses a challenge and a potential threat to the NA community.

This article reports on the findings of a descriptive qualitative study examining the experiences and perspectives of NAs in Catalonia, Spain, regarding their current professional status and the evolution of their competency framework. The insights gained from this study may prove valuable for nurses' training and professional development and for enhancing the quality of care they provide.

Historically, the first NAs emerged during the American Civil War (1861–1865), with Catherine S. Lawrence being recognised as the first nurse to administer anaesthesia. Subsequently, Sister Mary Bernard, founder of St. John's Hospital in Springfield, Illinois, became the first specialist nurse in anaesthesia, standardising its use in surgical procedures at this and other hospitals managed by religious communities (Wilson 2013).

In Europe, the introduction of nurses into the administration of anaesthesia began in a similar way to the United States, with nurses administering anaesthesia during surgical interventions under the surgeon's orders, pre-dating the establishment of anaesthesia as an exclusively medical field. From the 1950s onwards, with the advent of specialised training programmes for anaesthesia, the model evolved and many NAs and other anaesthesia assistants were eventually replaced by anaesthesiologists. However, in countries such as Austria, Denmark, France, Hungary, Iceland, Luxembourg, Norway, Sweden and Switzerland, the NA model persisted. In these nations, NAs worked alongside anaesthesiologists, forming collaborative teams with clearly defined roles according to each country's regulations. In countries such as Serbia, Slovenia and Spain, there are anaesthesia training programmes for nurses, and their presence in clinical practice is established. However, their role is not formally recognised at either the national or regional level, nor are their professional competencies acknowledged as those of an independent profession. Instead, their function is defined as an assistant role, complementing the work of anaesthesiologists. This perspective is often contested by nurses, who advocate for an expanded scope of practice and formal national recognition. By contrast, the situation in Germany, Great Britain and Turkey is different, as the role of anaesthesia assistant is officially recognised, meaning that a general nursing qualification is not a prerequisite for entering this area of expertise. In Great Britain, anaesthesia assistants and NAs coexist within the healthcare system (De Santana Lemos and De Cassia Giani Peniche 2016; International Federation of Nurse Anesthetists 2021).

In Spain, the existing literature on the involvement of nurses in anaesthesia administration is sparse. Historical texts on anaesthesia often mention '*practicantes*' (an outdated and often derogatory name for nurses), 'assistants' and 'aides' to the surgeon, who administered anaesthesia until the formal regulation of anaesthesiologist training (Hervas Puyal 2010; Montesinos Vicente 2011). During the Spanish Civil War (1936–1939), testimonies from nurses in the Republican faction confirm that they administered anaesthesia in war hospitals (Serra and Serra 2003; Valls 2008). Despite the lack of extensive literature, testimonies from retired professionals indicate that, in some hospitals, both nurses and medically trained anaesthetists administered anaesthesia until the regulation of the Anestesiología, Reanimación y Terapéutica del Dolor [Anaesthesiology, Resuscitation, and Pain Therapy] specialty in 1984 (Tutosaus Gómez et al. 2018).

Currently, NA roles, training and skills vary significantly depending on each country's regulations. The International Council of Nurses (ICN) defines an NA as 'an Advanced Practice Nurse (APN) who has the knowledge, skills, and competencies to provide individualised care in anaesthesia care, pain management, and related anaesthesia services to patients across the lifespan, whose health status may range from healthy through all levels of acuity, including immediate, severe, or life-threatening illnesses or injury' (International Council of Nurses 2021).

The International Federation of Nurse Anesthetists (IFNA) established standards for NA practice in 2001 and revised the competency framework in 2016, which includes seven core roles: communicator, collaborator, manager, health advocate, scholar, professional and expert (International Federation of Nurse Anesthetists 2016). Regarding skills development, both the ICN and IFNA recommend a specific training programme lasting 18–24 months to fully develop the skills defined by these institutions (International Council of Nurses 2021; International Federation of Nurse Anesthetists 2016).

Nursing care in anaesthesia is visibly demonstrated through advanced knowledge, technical expertise and the establishment of a therapeutic relationship, even within brief patient interactions. On a more subtle level, it is conveyed through the supportive role of anaesthesia nursing, reflected in professional courage and effective teamwork (Lekens et al. 2023).

Catalonia has been a pioneer in implementing the advanced practice nurse (APN) role in primary and out-of-hospital care settings since the early 2000s (Sastre-Fullana et al. 2017). The

TABLE 1 | Characteristics of the focus group participants.

Participant	Sex	Age	Years of experience as a nurse	Years of experience as a nurse anaesthetist	Sector	Activity
Participant 1	Female	48	27	17	Public	Clinical
Participant 2	Male	39	16	16	Public	Clinical/Teaching
Participant 3	Female	46	22	19	Private	Managerial/Teaching
Participant 4	Female	47	24	11	Public	Clinical
Participant 5	Female	41	20	5	Public	Clinical
Participant 6	Female	54	33	10	Public	Managerial/Teaching
Participant 7	Female	38	16	14	Public	Clinical
Participant 8	Female	49	39	5	Public	Managerial

conceptualisation of the NA as an APN emerged in Catalonia in the mid-2010s (Comellas Oliva 2016; Sevilla Guerra and Zabalegui 2016; Sanclemente-Dalmau et al. 2022). Concurrently, the Spanish Association of Anaesthesia, Resuscitation, and Pain Therapy Nurses (ASEEDAR-TD) proposed a standard definition of the competency framework for NAs in 2012 (Peix Sagués and Pérez Castro 2012). Based on this definition, an integrative framework was proposed for Catalonia in 2022, in consonance with the IFNA's conceptual framework (Sanclemente-Dalmau et al. 2022). However, in this last study, a gap in the knowledge was identified regarding how NAs in Catalonia had developed professionally and what their future prospects were, which our study aims to explore.

2 | Methods

2.1 | Aim

To explore the current and future professional landscape of nurse anaesthetists within the healthcare system of Catalonia (Spain).

2.2 | Design

This study uses a descriptive qualitative approach (Jiggins and Bronwynne 2016). Descriptive studies provide a deeper understanding of the behaviours, beliefs, and attitudes associated with the phenomenon under investigation (Herion et al. 2019). In this case, this method was used to observe and understand how NAs perceive their daily situations, their existing competency framework and their future prospects.

2.3 | Study Setting and Recruitment

Participants were recruited through convenience sampling via the Catalan Association of Anaesthesia, Resuscitation, and Pain Therapy Nurses (ACIAR-TD), which sent the invitation to participate in the study to all its members. The participant profile sought were nurses currently in clinical practice at the time of consultation, with more than 5 years' experience, and specific postgraduate training in anaesthesia, which was in keeping with the criteria established by Hamric et al. (2019) for APNs. Participants who had worked outside Spain in the previous five years were excluded.

2.4 | Data Collection

Data were collected through a focus group session following a script prepared by ANs in a previously published study (Sanclemente-Dalmau et al. 2022). The questions focused on the differences in competencies between ANs and generalist nurses, the evolution of ANs in Catalan healthcare and how the nurses viewed their professional future (Appendix 1). The virtual session, conducted in June 2021 via Google Meet, was recorded after data saturation was deemed to have been reached (105 minutes). It was moderated by a member of the research team experienced in using this methodology for qualitative data collection. Another observer took notes to supplement the subsequent analysis. Once transcribed, the document was returned to participants for their comments or modifications.

The sample characteristics are presented in Table 1.

2.5 | Participants

Nine nurses responded to the invitation, one of whom was ultimately unable to take part in the focus group session due to personal reasons. The focus group consisted predominantly of women ($n = 7$), with one male participant. The mean age was 45.5 ± 5.49 years. Their mean experience as nurses was 24.6 ± 8.10 years, and 12.1 ± 5.30 specifically as NAs (Table 1). The group included nurses from different areas of practice, including clinical practice, management, and teaching, in both the private and public sectors.

2.6 | Data Analysis

Content analysis was conducted following Giorgi's method (Giorgi 1997). Initially, the transcription of the focus group session was read several times to identify units of meaning (codes). After in-depth readings, the codes were grouped based on the similarity

of their meanings, and central categories were finally established. The analysis was supported by the Atlas.ti software, version 22.1.0.

According to the proposal by Onwuegbuzie et al. (2011), micro-interlocutor analysis, including any agreements reached on each of the questions or emerging topics, was incorporated into the focus groups. This type of analysis involves revealing who agreed, disagreed or did not participate, giving a voice to all participants. Both analyses were combined in this research to avoid losing relevant information and ensure equal participation, thus excluding the information bias caused by personal characteristics like shyness or divergent experiences. Including the participation and consensus of the participants in each category strengthened the validity and richness of our findings.

2.7 | Rigour and Reflexivity

To ensure quality criteria in qualitative research (Leonardsen et al. 2023), a structured interview script from a previous study (Sanclemente-Dalmau et al. 2022) was used and reviewed by the research team and the session moderator, thus fulfilling the credibility criterion. The transferability of the data was ensured through heterogeneous participation, which reflected how the nursing profession is distributed in terms of sex, as well as the diversity of management models at the participants' facilities. Rigour in both the methodological design of the proposal and the participation of the mentioned research roles fulfilled the dependability criterion, while the strategies of internal triangulation among researchers and external triangulation among participants fulfilled that of confirmability. Additionally, the data were triangulated with the existing literature to underpin the achieved findings (Morse 2015).

3 | Findings

After multiple readings, two research team members conducted the initial open coding, identifying 21 codes. These were subsequently grouped into four categories during the second phase of axial coding: 'Profile of the nurse anaesthetist', 'Current professional situation', 'Determining factors extrinsic to the NA profession' and 'Future prospects' (Table 2).

3.1 | Theme 1. The Profile of Nurse Anaesthetist

Anaesthesia nursing is not a recognised specialty in Spain and, therefore, nor is it recognised in Catalonia. Despite its current legal status, the study participants agreed that NAs play a specialised role and that they differ from generalist nurses in many aspects.

3.1.1 | Competencies

Becoming competent in a specific area requires both theoretical and practical training. In addition to clinical skills, communication skills and empathy are also essential for clinical practice and effective interaction with other health professionals in person-centred care settings.

> First of all, we need to have additional continuing education resources that offer extensive training that is both formal and recognised. We must have the experience and knowledge to back this up, as well as complex decision-making and clinical skills. This is our basis for calling ourselves "nurse anaesthetists". (P-6)

Participants agreed that NAs are more than prepared and qualified to assume the role they play. Due to their training, they felt prepared to take on advanced responsibilities that are not yet defined in Spain or recognised in the Spanish legal framework.

> No one—literally no one—questions that an ICU nurse can handle a highly complex ECMO-supported patient receiving a lot of vasoactive drugs while on life support. And if that ICU nurse is capable of handling one patient, they can handle two patients, always depending on patient complexity. And at times, the ICU or internal medicine physician may be somewhere else or unavailable. And nobody calls this into question or complains about it, as is the case with nurse anaesthetists when they administer propofol following a doctor's orders. (P-3)

There was a shared feeling of a lack of autonomy to make decisions about patient treatment, although they expressed that they did feel qualified as a result of their training. According to our analysis, the root cause of this lack of autonomy, especially in terms of advanced practice skills, was the absence of a legal framework, leaving NAs without a safety net for their daily practice. This is one of the key aspects to be improved to be able to play a more autonomous role that goes beyond the general responsibilities of the nursing profession, such as providing health education.

> We do what they let us do… because they won't let us do everything we want to do either. (P-8)

3.1.2 | Care Provision

Providing care is at the very heart of the nursing profession, as was also emphasised by the study participants. It was important for them to highlight this notion—which they are afraid of losing in the highly technological environment that they must navigate—as well as the fact that they can bring a more humanised side to patient care, unlike medical training, which, until now, has been more focused on treating illnesses.

> We felt the need… that anaesthetists were missing the nursing aspect of looking after patients… In the past, physicians were less caring and more technical. We missed the enormous care and consideration for patients that nurses provide in procedures. So it was very clear to us that this figure was who was missing in this whole process.… (P-1)

TABLE 2 | Relationships between codes and categories.

Category	Code	Definition
Profile of the nurse anaesthetist Description of the skills, knowledge and scope of professional practice of NAs	Competencies	The set of skills, attitudes, knowledge and complex decision-making processes that enable professional performance to always be at the required level (Consell de Col·legis Oficials d'Infermeria de Catalunya [Council of Official Nurses' Associations of Catalonia] 2002).
	Care provision	Activities that are structured and designed to meet the needs of an individual to promote, maintain or restore their health (Urra et al. 2011).
	Health education	A dynamic and ongoing process involving self-care and recommendations for maintaining or improving quality of life (Soto et al. 2018).
	Expertise	Practical knowledge in an area that makes nurses capable of identifying, tackling and solving problems in their daily practice without having to engage in any theoretical reasoning (Benner 1987).
	Training	Theoretical and practical knowledge acquired through an educational programme.
	Humanisation	The way to care for and heal patients as individuals based on scientific evidence while incorporating patients' dimensions of dignity and humanity, providing care based on trust and empathy, and contributing to their well-being and the best possible health outcomes (Jovell 1999).
	Perioperative process	A process involving a multidisciplinary team that encompasses all phases patients go through, from pre-anaesthetic evaluation, through intraoperative and immediate postoperative care, to adaptation to their environment.
	Patient safety	Activities aimed at protecting and minimising potential risks to people.
Current professional situation Status of NAs within organisations	Role definition	Defining the scope of practice of the different members in the healthcare team.
	Institutional organisation	NAs' organisational status within hospitals.
	Work intrusion	Performance of activities by unauthorised persons.
Determining factors extrinsic to the NA profession External elements or factors that affect or influence a phenomenon but are not inherently part of it	Increased demand for anaesthetic procedures	Increase in the number of anaesthesia procedures to ensure comfort and minimum pain.
	Financial interests	Differences between the costs of anaesthetists and NAs in terms of salary.
	Shortage of anaesthetists	Shortage of physicians specialised in anaesthesiology, resuscitation and pain therapy in hospitals.
Future prospects Initiatives aimed at promoting a desirable future for the NA profession	Growth of the profession	Increased number of NA positions and broadening NAs' scope of practice.
	Nursing specialty	Official state-wide accreditation recognising a specialist area of nursing practice.
	Advocacy	Positive stance and actions aimed at improving the profession.
	Institutional recognition	Legal and institutional regulation of positions for NAs.

3.1.3 | Health Education

Health education skills are fundamental to the field of nursing and are crucial for advocating an approach to health that focuses on the promotion of well-being rather than simply treating illness. Although health education is commonly associated with primary and/or community care, its relevance extends to many different areas, including anaesthesia. In settings such as pre-anaesthesia consultation, multimodal prehabilitation and pain units—which operate within hospitals and may often be perceived as highly specialised—health education plays a key role. Providing appropriate information and guidance to patients in these settings is vital to ensure that the care process is both comprehensive and effective.

Health education is essential in all care stages and settings, enabling individuals to actively participate in their own care and promoting a more holistic and proactive approach to health.

> Yes, [just a comment on] what [P6] was talking about. She was talking about a pain-related case, and pre-anaesthesia appointments sprang to mind. I mean, in addition to everything that NAs do in pre-anaesthesia—taking an exhaustive case history of the patient and collecting all their data—they provide health education, so patients open up more to nurses than to anaesthetists. Patients ask us questions that they won't ask a doctor. I mean, we provide extra input that anaesthetists don't, for example, all the health education that anaesthetists usually don't bother to deliver because they're also more technical and more focused on the testing side… On the other hand, we explain to patients what will happen to them once they are taken into theatre, and we'll do this in a thorough and clear way because we did exactly that just the day before. This is another valuable aspect, another contribution made by NAs. (P-3)

3.1.4 | Training

Participants highlighted the importance of previous experience as a nurse before specialising in anaesthesia, given the complexity of the skills required. This experience is not a prerequisite for entering current postgraduate programmes; however, once nurses have completed their postgraduate education, they are confident that they already have a good level of training and skills. Nevertheless, they suggest extending clinical placement hours, especially those hours promoting their autonomy as NAs, in line with the recommendations made by the ICN and the IFNA.

> I think that you gain experience as you […]. I might actually agree more with what [P-4] said about clinical placement hours; I definitely think there aren't enough. A nurse who has just completed a master's degree obviously cannot be considered an expert nurse at all. They may have been trained, they may have developed their skills and professional competence, which are well defined and that only a master's degree can provide, but at the end of the day, skills and experience can only be established on a day-to-day basis. It is also clear that in the end, nurses who take up these jobs need to be supported and supervised. (P-3)

3.1.5 | Expertise

Participants distinguished between experience and expertise, considering that expertise entails years of experience, specifying that working in a particular field for years does not necessarily mean that a nurse is an expert in that area. Expertise is considered as the practical knowledge in an area that allows one to identify, tackle and solve problems in their daily practice without having to do any theoretical reasoning. Perhaps, as argued by P-4, expertise has to do with people's attitude towards complex situations and interpersonal relationships.

> I think that training programmes are too short in terms of clinical placement hours. We should have training that involves more actual hands-on training hours and more activities performed solo, rather than assisted by an anaesthetist… I strongly believe that expertise does encompass experience, but I also must admit that I've been working for quite a few years, and I have colleagues who have been working for as many years as I have, for 24 to 25 years or so, and in my opinion, they still wouldn't qualify as NAs, no matter how many years they've been working there. And then I have colleagues who have been working for far fewer years than me and yet you can tell that their profile ticks all the boxes, that they could perfectly well be NAs. (P-4)

3.1.6 | Humanisation

NAs play a prominent role in the surgical area, though they are not uniformly represented across all hospitals. However, there has been a growing presence in areas outside of surgery, especially in procedures where anaesthetic techniques are applied to improve patient tolerance. In these contexts, NAs perform superficial and/or deep sedations, administering the sedation according to protocols or medical prescriptions and overseeing the procedure from start to finish. This change reflects the evolution of the responsibilities of NAs in non-surgical settings.

In these areas, the technological demands of these processes can sometimes overshadow the more humanistic aspect of care. NAs believe they are the key professionals to ensure this aspect is not lost by bringing a holistic perspective to patient care.

3.1.7 | Perioperative Process

NAs are essential throughout the perioperative process, from pre-anaesthetic assessment to postoperative adaptation to the environment. This approach, linked to perioperative medicine,

has evolved over the past two decades. NAs are involved beyond the surgical domain, participating in pre-anaesthetic consultations, diagnostic areas and pain units. Against this backdrop, their role is notable for health education, information provision, and support, promoting greater patient autonomy. This broad approach reflects the evolution of anaesthesia nursing in the comprehensive care of patients.

> [NAs] care for the patient throughout the entire perioperative process, whether from the moment surgery is decided or from the pre-anaesthetic visit. They do not only take the case history, but also prepare the patient to face the operation in the best possible way, to achieve the best postoperative outcomes. (P-2)

3.1.8 | Patient Safety

Participants agreed that incorporating sedation into procedures that were previously done without anaesthesia has improved patient comfort and reduced pain, thereby significantly enhancing the safety of the process. The inclusion of NAs in these procedures has facilitated the generalisation of sedation and the monitoring and supervision during the process.

> The truth is that we don't just insert IV lines, load pumps, or administer propofol; we do many more things, namely caring for our patients throughout the perioperative period and ensuring safety during anaesthesia. (P-8)

3.2 | Theme 2. Current Professional Status of NAs

3.2.1 | Institutional Organisation

Practical differences and interpersonal relationships at work led to enriching discussions. The lack of standardised training and scope of practice regulations resulted in varying practices among NAs, depending on the institution. This absence of a uniform regulatory framework caused inconsistencies in structure and NA presence across different areas. Participants expressed a strong desire for standardised regulations based on training and skills, as the current diversity was not well received. They considered it essential to establish consistent standards to ensure coherence in professional practice.

> There are anaesthesia residents, and nurse anaesthetists don't really have a [recognised] role. There are nurse anaesthetists in the pain clinic, another doing preoperative assessments, and that's pretty much it for "nurse anaesthetists", quote unquote'. (P-2)

The poor management of nursing specialties in Spain's history, characterised by a lack of definition and recognition both socially and financially, is perhaps one of the reasons why management has utilised the versatility of nurses in various work areas without considering their prior training and/or experience. In the case of NAs, given that it has not been recognised as a specialty until now, this issue has been even more pronounced.

> The versatility of nurses has always been a valuable tool used to move them from one area to another, without considering their training. (P-6)

3.2.2 | Role Definition

It was important for the group to establish the model for the anaesthesia team they needed and wanted in order to meet the needs of individuals and society. In an ideal team, anaesthetists and nurses coexist, each with their own training and responsibilities, which must be clearly defined to progress and work more safely, without fear of professional intrusion.

This lack of role definition, especially for NAs, sometimes makes them feel lost in their workplace. They understand that they have been trained to perform a particular function, but when the time and place come to apply this knowledge, they are not allowed to, and other professionals perform their role, relegating them to a secondary role or excluding them entirely.

> In fact, when I work as a nurse anaesthetist in the operating theatre, I can't even start IV lines because the anaesthesia resident needs to practice, and often, when I'm in the theatre, I can't quite find my place because I don't know what my role is in there. (P-4)

The participants felt it was essential to determine the scope of practice of each team member, especially NAs, which is currently undefined, and that the nurses themselves should do this. They hope that this will result in a mature teamwork approach that would greatly benefit patients, the healthcare facility and the profession, ensuring the protection of jobs and the role of nurse anaesthetists within the healthcare team.

> We have our own training and scope of practice, and it is our duty to defend them. (P-6)

3.2.3 | Work Intrusion

The incorporation of NAs by the managers of healthcare facilities in workplaces where there had historically been an anaesthetist, or in new sites closely linked to the anaesthetic process, has sometimes triggered the feeling that nurses are being used to replace anaesthetists.

The introduction of new roles in a team can sometimes lead to issues if not done using a proper method of integration, making other team members feel involved and supporting the new members. These issues can result in relationship problems among team members and communication difficulties within the team, which may lead to further problems in patient care, potentially causing undesirable effects.

> I feel like they view us as a threat, as if we wanted to take the anaesthetists' jobs, when in reality, there's enough work for them, for us, and for many more people. They're afraid of losing their position. (P-8)

3.3 | Theme 3. Determining Factors Extrinsic to the NA Profession

3.3.1 | Increased Demand for Anaesthetic Procedures

The increase in procedures such as diagnostic or therapeutic examinations within disease prevention programmes, as well as technological advances leading to an increase in minimally invasive surgery in recent years, and their performance under anaesthesia (sedation in most cases) to ensure patient comfort, is an increasingly common reality in hospitals. This increase has been particularly notable in areas outside the surgical domain, leading to the need to increase the number of anaesthesia professionals to cover these procedures.

> We try to sedate patients for any procedure that might cause them discomfort, causing the number of sedation procedures to increase… This is a social reality that has led to the introduction of nurses in this field and these departments. (P-3)

It is important to note that it is in these settings where the presence of nurses administering anaesthesia in the form of sedation has grown the most, sometimes without the corresponding anaesthesia training and without the supervision of an anaesthetist, relying only on prescriptions from other medical specialists.

3.3.2 | Financial Interests

Salary disparities are based on professional category, and so far, nurses have not received salary recognition commensurate with their university degrees. This creates inequities between nurses and other healthcare professionals, making it appear that employing nurses with the necessary training, but not recognised as specialists, is more cost-effective for institutions than hiring physicians. Although this debate is ongoing, participants do not view this as a reason to limit the inclusion of nurses in traditionally medical areas. In other countries, salary differences persist, but the role of nurses in anaesthesia teams is clearly defined.

> The main issue is financial in nature, and we need to turn this to our advantage. (P-4)

> Countries like France or Belgium are way ahead of us, aren't they? We need to reflect on this. Why do they manage it so well—even brilliantly—just next door? (P-2)

3.3.3 | Shortage of Anaesthetists

As with other healthcare professions, there is currently a shortage of medical specialists in anaesthesiology, resuscitation and pain management. The number of new specialists emerging each year has not grown exponentially in the new areas that require professionals trained in this field. At the same time, as mentioned above, there is an increasing demand for anaesthetic procedures for examinations, surgeries and pain management procedures. This has often led to anaesthesia teams being overwhelmed, and even necessitating the cancellation of scheduled surgical procedures, with significant implications for the healthcare system, such as longer waiting lists and poorer quality of life for patients.

Participants made it clear that this was another major reason for the increasing demand for including nurses in anaesthesia teams. However, this is not intended to replace anyone. Participants wanted to highlight new areas where nurses can contribute to patient care in the perioperative process.

> There are many surgical procedures being cancelled, many procedures being done without appropriate sedation due to a lack of anaesthetists… because the anaesthesia teams and departments are overwhelmed, it's utterly unsustainable. (P-3)

3.4 | Theme 4. Future Prospects

3.4.1 | Growth of the Profession

Participants view NAs as professionals who are just in the early stages of their careers. They envisage a promising future ahead with opportunities for growth in new positions related to the development of advanced clinical practice skills.

> I see a bright future [for this profession]. I think necessity dictates, and we must take advantage of the need for anaesthetists. Now we are APNs, that's what we are, and we must make our value known. (P-8)

3.4.2 | Nursing Specialty

Participants agreed that if the time comes to regulate the developing specialties, they will prefer to be recognised as nurses from a distinct anaesthesia specialty rather than being grouped with others, such as critical care nursing, which involves different training and scope of practice. Although they may be prepared to care for critically ill patients in certain situations, NAs believe that the role of critical care nurses is perceived more autonomously within the healthcare system and among its professionals, unlike the situation with nurse anaesthetists, which is sometimes seen as encroachment.

> No one—literally no one—questions that an ICU nurse can handle a highly complex […] patient […]. And at times the […] physician may be somewhere else

> […]. And nobody calls this into question or complains about it, as is the case with nurse anaesthetists when they administer propofol following a doctor's orders or protect the patient's airway using the necessary techniques (e.g., a jaw thrust manoeuvre, ventilating with an Ambu® bag, etc.). All this has generated a huge and senseless controversy. (P-3)

3.4.3 | Advocacy

The proposed effort is aimed first at defining competencies and then at defending the new positions that have been created—where NAs are present—taking advantage of the current shortage of professionals while being mindful of the economic reality for institutions. Participants felt a sense of responsibility and encouraged themselves to drive the necessary actions to achieve recognition, taking the lead rather than being directed by other professionals.

> It's in our hands. That's who we are. (P-8)

3.4.4 | Institutional Recognition

Several key aspects were deemed necessary: (a) support from the management bodies of the hospitals, (b) the need for these bodies to understand the roles and scope of practice of NAs in order to adapt job positions and ensure that nurses in these roles meet the necessary criteria, and (c) legal recognition from the institutions responsible for training and regulating healthcare professions (Spanish Ministries of Education and Health, as well as official professional associations).

> I think two things need to be highlighted: what [P-8] said about management support, because I think it's very important for management teams to believe in the role of NAs, and there also needs to be proper regulation in terms of laws that clearly define their responsibilities, where their scope of practice ends, and where the anaesthetist's begins. That's it. (P-7)

4 | DISCUSSION

The findings from this study underscore several critical factors contributing to the growth of NA positions in Catalonia: the advancement in their professional skills and scope of practice, the shortage of anaesthetists and salary disparities between NAs and anaesthetists. The preferred anaesthesia team model is the one adopted in other European countries, which emphasises collaborative work, delegation of tasks and recognition of individual skills and abilities, suggesting a path forward for Catalonia.

Historically, NAs in Catalonia have been viewed as assistants rather than autonomous professionals. This perception limits their role and raises concerns about being replaced by technical staff, as seen in other countries (International Federation of Nurse Anesthetists 2021). Possessing extensive training and university degrees, participants in this study assert that their scope of practice extends beyond mere assistance, advocating for a more significant and autonomous role in the anaesthesia process.

NAs play a vital role throughout the entire anaesthetic procedure, ensuring patient care, which remains the core of their profession. In a highly technical and evolving environment, NAs are essential for patient safety and act as advocates for patients' health and rights. Sundqvist and Carlsson (2014) aptly described their role as 'having patients' lives in their hands', a sentiment echoed by the study participants. Additionally, NAs contribute significantly to health education for patients and their families by engaging them in the care process and strengthening the relationship between patients, families and nurses. This contrasts with the findings of Herion et al. (2019), which indicate that NAs' self-assessment of competence considerably decreased when involving family members.

Health promotion has traditionally been a soft skill for nurses. However, there is a noted deficit in health education within the surgical-anaesthetic field (Goñi Leranoz and Perez de Albeniz Crespo 2009; Juvé Juvé Udina et al. 2007). The involvement of NAs in pre-anaesthetic consultations and multimodal prehabilitation programmes has helped improve this skill (Sanclemente-Dalmau et al. 2022). Preoperative education by NAs enhances patient satisfaction without increasing surgical cancellations (Díez-García et al. 2023).

Psychological support, crucial during vulnerable moments, is another critical responsibility of NAs (Herion et al. 2019). Unlike other studies, our research shows that NAs actively participate in the surgical verification process or checklist, showcasing their commitment to patient safety and aspiration for leadership in this area (Rönnberg and Nilsson 2015).

The increased anaesthetic activity outside the surgical area in Catalonia is driven by the rising demand for anaesthetic procedures and the shortage of anaesthetists (Barber Pérez and González López-Valcárcel 2022; Castillo et al. 2006; Sabaté et al. 2008). This situation has led to the integration of NAs in non-surgical areas, performing conscious sedations and monitoring patients during diagnostic and therapeutic procedures. The lack of anaesthetists has prompted cost-effective models where NAs administer sedations under supervision and monitor patients throughout the procedure (De la Calle et al. 2012). Spain's mean of 16 anaesthetists per 100,000 inhabitants falls below the recommended 20 by the Lancet Commission on Global Surgery, highlighting the need for non-physician anaesthesia providers (Law et al. 2024).

The issue of cost savings associated with employing NAs instead of anaesthetists is a topic of debate, especially compared to US models where healthcare is predominantly private (Smith et al. 2004; Sun et al. 2018). Although no specific cost-effectiveness studies have been conducted in Catalonia, similar results are to be expected. However, professional development should not be driven by salary disparities but by the advancement and consolidation of professional roles and skills.

The autonomy of NAs remains a concern due to the lack of well-defined responsibilities, leading to accusations of professional encroachment. Similar issues of autonomy have been observed in other countries, such as France, despite having different training and practice models in place (Syndicat National des Infirmier(e)s-Anesthésistes 2019).

Allowing professionals without a nursing background to assume roles in anaesthesia poses a significant risk, as it undermines the quality of care, compromises patient safety and weakens the holistic approach to healthcare. NAs not only administer anaesthesia but also ensure perioperative safety, provide emotional support and deliver health education—key aspects that may be overlooked if replaced by professionals with a predominantly technical background. Moreover, the absence of a clear regulatory framework for NAs in certain regions creates uncertainty and may lead to their replacement by less qualified personnel, thereby increasing the risk of adverse events. By contrast, models implemented in countries such as France and Norway have demonstrated that collaboration between anaesthetists and NAs enhances role distribution, improves efficiency and reduces complications, ultimately ensuring safer and higher-quality patient care (Leonardsen et al. 2023).

Our study reveals that NAs in Catalonia seek recognition of their scope of practice beyond being mere assistants, emphasising their role in holistic patient care, health promotion and patient safety during anaesthetic procedures. The lack of autonomy and potential replacement by technical staff are significant concerns. As Aiken et al. (2017) demonstrated, professional nursing care correlates with reduced mortality and improved patient perceptions.

4.1 | Limitations

This research was conducted in June 2021, a period marked by the global COVID-19 pandemic. Against this backdrop, factors such as the overwork and fatigue of nurses necessitated the use of a single focus group for data collection and analysis.

Despite the richness and quality of our findings, further research is necessary to deepen our understanding of the explored field.

5 | Implications for Nursing and Health Policy

The expansion of NA roles in Catalonia reflects the growing demand for anaesthesia procedures, the shortage of anaesthetists and the advancement of the nursing profession. NAs advocate for greater recognition of their skillset and autonomy within the anaesthetic process, particularly in non-surgical settings, where they are increasingly involved in performing supervised sedation. This shift highlights the need for policy adjustments to support their evolving role within the healthcare system.

To ensure the effective integration of NAs, it is essential to establish clear policy frameworks that formally recognise their professional autonomy and align their skill sets with international standards. Health policymakers should prioritise the recognition of NAs as advanced practice nurses, a measure that would not only enhance patient care but also improve the efficiency and safety of anaesthesia services. This recognition must also address pay disparities and ensure access to continuous professional development to retain and motivate these highly skilled professionals.

Moreover, as NAs take on an expanding role beyond traditional surgical settings—driven largely by the shortage of anaesthetists—their broader integration into multidisciplinary teams is imperative. Health policy should actively promote collaboration between NAs and anaesthetists to develop cost-effective and efficient care models that uphold high standards of patient safety.

The recognition of NAs as autonomous professionals, supported by robust regulatory frameworks and equitable remuneration, is fundamental to the future of anaesthesia care. Health policy must foster an environment that values their contributions, ensuring the continued evolution of their role and the advancement of healthcare.

6 | Conclusions

This research serves as a starting point for professional and institutional bodies to recognise NAs as experts and establish their specialist scope of practice framework according to global standards, such as the ones set out by the ICN and IFNA, while unifying it across Catalonia.

The rise in anaesthetic procedures due to social demand, the shortage of anaesthetists, salary disparities and the advancement of the nursing profession have facilitated the growth of NA positions in Catalonia. Our participants favoured the anaesthesia team model adopted in other European countries, which is based on collaborative work and task delegation, allowing NAs to maintain their autonomous care in areas where they are recognised as competent. To make progress in this direction, it is crucial for professional and institutional bodies to acknowledge NAs as experts in their field. Additionally, NAs call for a consensus on a competency framework that aligns with international standards and adheres to ICN and IFNA regulations to be uniformly applied across Catalonia.

Author Contributions

Study design: MSD, PGE and ERA. Data collection: XPA, GPR and MSD. Data analysis: XPA, GPR and MSD. Study supervision: JBB, ERA and PGE. Manuscript writing: MSD, XPA, GPR, MSD and JBB. Critical revisions for important intellectual content: PGE, ERA.

Acknowledgements

To all the individuals who voluntarily participated in this research, contributing with honest reflections on their own and collective professional practice. Dr Alejandro García-Aragón and Reece Anderson edited and translated the manuscript from Spanish to English. A special acknowledgement to the city council of Olesa de Montserrat for granting the 40th Recerca Vila de Olesa Award.

Ethics Statement

The study was approved by the Clinical Research Ethics Committees at the Unió Catalana d'Hospitals [the Catalan Union of Hospitals] under reference code 18/87. Participants were duly informed about the study objectives, and their written informed consent was requested for both the recording of the session and the use of the collected data. Confidentiality of the participants was preserved at all times.

Conflicts of Interest

The authors declare no conflict of interest.

Data Availability Statement

The datasets generated and/or analysed during the current study are not publicly available due to privacy restrictions specified in the participants' informed consent form. However, they are available from the corresponding author upon reasonable request.

References

Aiken, L. H., D. Sloane, P. Griffiths, et al. 2017. "Nursing Skill Mix in European Hospitals: Cross-sectional Study of the Association With Mortality, Patient Ratings, and Quality of Care." *BMJ Quality and Safety* 26, no. 7: 559–568. https://doi.org/10.1136/bmjqs-2016-005567.

Barber Pérez, P., and B. González López-Valcárcel. 2022. Informe Oferta-Necesidad de Especialistas Médicos 2021–2035. https://www.sanidad.gob.es/profesionales/formacion/necesidadEspecialistas/doc/2022Estudio_Oferta_Necesidad_Especialistas_Medicos_2021_2035V2.pdf.

Benner, P. 1987. *Práctica Progresiva en Enfermería*. Grijalbo.

Berenguera Ossó, A., M. J. Fernández de Sanmamed Santos, M. Pons Vigués, E. Pujol Ribera, D. Rodríguez Arjona, and D. Saura Sanjaume. 2017. *Listen, Observe and Understand. Reclaiming the Narrative in Health Sciences: Contributions of Qualitative Research* (1st ed.). Institut Universitari d'Investigació en Atenció Primària Jordi Gol (IDIAP J. Gol).

Castillo, J., X. Santiveri, M. J. Linares, D. Pelegrí, S. Sabaté, and J. Canet. 2006. "Ambulatory Anesthesia in Catalonia, Spain." *Medicina Clinica* 126, no. Suppl 2: 57–61. https://doi.org/10.1157/13088803.

Comellas Oliva, M. 2016. "Construcción de la enfermera de práctica Avanzada en Catalunya (España)." *Revista Brasileira de Enfermagem (Internet)* 69, no. 5: 991–995. http://doi.org/10.1590/0034-7167.2016690507.

Consell de Col·legis Oficials d'Infermeria de Catalunya. 2002. Competències de la professió infermera. https://www.consellinfermeres.cat/wp-content/uploads/2016/12/1997-Competencies-de-la-professi%C3%B3-dinfermeria.-Edici%C3%B3-2002-1.pdf.

De la Calle, J. L., D. Abejon, J. Cid, C. Del Pozo, J. Insausti, and E. López. 2012. "Estándares de Calidad Asistencial y Catálogo de Procedimientos de las unidades de dolor Crónico." *Revista De La Sociedad Espanola Del Dolor* 19, no. 3: 166–167.

De Santana Lemos, C., and A. De Cassia Giani Peniche. 2016. "Nursing Care in the Anesthetic Procedure: An Integrative Review." *Revista Da Escola De Enfermagem* 50, no. 1: 154–162. Escola de Enfermagem de Universidade de Sao Paulo. https://doi.org/10.1590/S0080-623420160000100020.

Díez-García, C., I. Gich Saladich, and I. Bolibar Ribas. 2023. "Effectiveness of Nurse-Led Preoperative Assessment for Anesthesia: a Prospective Cohort Study." *Journal of Perianesthesia Nursing* 38, no. 4: 595–603. https://doi.org/10.1016/j.jopan.2022.10.007.

Giorgi, A. 1997. "The Theory, Practice, and Evaluation of the Phenomenological Method as a Qualitative Research Procedure." *Journal of Phenomenological Psychology* 28, no. 2: 235–260. https://doi.org/10.1163/156916297×00103.

Goñi Leranoz, E., and M. Perez de Albeniz Crespo. 2009. "Autoevaluacion de Competencias por las Enfermeras de Anestesiologia." *Revista Espanola De Anestesiologia Y Reanimacion* 56, no. 3: 147–162. http://www.ncbi.nlm.nih.gov/pubmed/19408781.

Hamric, A. B., C. Hanson, M. F. Tracy, and E. O'Grady. 2019. *Advanced Practice Nursing. An Integrative Approach* (6th ed.). Elsevier Inc.

Herion, C., L. Egger, R. Greif, and C. Violato. 2019. "Validating International CanMEDS-Based Standards Defining Education and Safe Practice of Nurse Anesthetists." *International Nursing Review* 66, no. 3: 404–415. https://doi.org/10.1111/inr.12503.

Hervas Puyal, C. 2010. La anestesia en Cataluña. Historia y evolución (1847–1901). http://www.tdx.cat/handle/10803/2300.

International Council of Nurses. 2021. *Directrices para las Enfermeras Anestesistas*. International Council of Nurses. https://www.icn.ch/es/noticias/el-consejo-internacional-de-enfermeras-lanza-directrices-para-las-enfermeras-anestesistas.

International Federation of Nurse Anesthetists. 2016. *Code of Ethics, Standards of Practice, Monitoring, and Education*. Europe. http://dev.ipsasb.org/system/files/meetings/files/4502.pdf.

International Federation of Nurse Anesthetists. 2021. *The Global Voice for Nurse Anesthesia: International Federation of Nurse Anesthetists (1989–2021)*.

Jiggins, K., and E. Bronwynne. 2016. "Qualitative Descriptive Methods in Health Science Research." *Health Environments Research and Design Journal* 9, no. 4: 16–24. https://doi.org/10.1177/1937586715614171.

Jovell, A. J. 1999. "Medicina Basada En la Afectividad." *Medicina Clínica* 113, no. 5: 173–175.

Juvé Udina, M. E., S. Farrero Muñoz, C. Matud Calvo, et al. 2007. "¿Cómo Definen los Profesionales Sus Competencias Asistenciales?" *Nursing* 25, no. 7: 50–61. https://doi.org/10.1016/S0212-5382(07)70957-3.

Law, T. J., M. S. Lipnick, W. Morriss, et al. 2024. "The Global Anesthesia Workforce Survey: Updates and Trends in the Anesthesia Workforce." *Anesthesia & Analgesia*. 139, no. 1: 15–24. https://doi.org/10.1213/ANE.0000000000006836.

Lekens, A. L. B., S. Drageset, and B. S. Hansen. 2023. "How Nursing Care Is Expressed Among Nurse Anaesthetists in the Perioperative Context: a Meta-ethnographic Synthesis." *Journal of Clinical Nursing* 32, no. 17–18: 5763–5778. John Wiley and Sons Inc. https://doi.org/10.1111/jocn.16700.

Leonardsen, A. L., S. Drageset, S. Ellingsen, T. J. Finjarn, L. Sandvik, and M. V. Olsen. 2023. "Nurse Anesthetist Practice over 40 Years: A Repeated Cross-Sectional Study in Norway." *AANA Journal* 91, no. 5: 364–370. https://www.proquest.com/scholarly-journals/nurse-anesthetist-practice-over-40-years-repeated/docview/2875352741/se-2.

Lincoln, Y. S., and E. G. Guba. 2005. "Paradigmatic Controversies, Contradictions, and Emerging confluences." In *The SAGE Handbook of Qualitative Research*, edited by N. K. Denzin and Y. S. Lincoln (3rd ed.). Sage Publications, Inc.

Montesinos Vicente, F. 2011. Practicantes, Matronas y Cirujanos dentistas en la España contemporánea (1855–1932). https://www.tesisenred.net/handle/10803/31835#page=1..

Morse, J. M. 2015. "Critical Analysis of Strategies for Determining Rigor in Qualitative Inquiry." *Qualitative Health Research* 25, no. 9: 1212–1222. https://doi.org/10.1177/1049732315588501.

Onwuegbuzie, A. J., W. D. Dickinson, N. L. Leech, and A. G. Zoran. 2011. "A Qualitative Framework for Collecting and Analyzing Data in Focus Group Research." *Paradigmas* 3, no. 1: 127–157. https://doi.org/10.1177/160940690900800301.

Peix Sagués, M. T., and A. Pérez Castro. 2012. Competencias y Funciones de la Enfermería de Anestesia, Reanimación y Terapia del Dolor. In Aseedar-td. http://www.aseedar-td.org/competencias.

Rönnberg, L., and U. Nilsson. 2015. "Swedish Nurse Anesthetists' Experiences of the WHO Surgical Safety Checklist." *Journal of Perianesthesia Nursing* 30, no. 6: 468–475. https://doi.org/10.1016/j.jopan.2014.01.011.

Sabaté, S., C. Gomar, J. Canet, J. Castillo, and A. Villalonga. 2008. "Survey of Anesthetic Techniques Used in Catalonia: Results of the Analysis

of 23,136 Anesthesias (2003 ANESCAT study)." *Revista Española De Anestesiología y Reanimación* 55, no. 3: 151–159. https://doi.org/10.1016/s0034-9356(08)70533-4.

Sanclemente-Dalmau, M., P. Galbany-Estragués, X. Palomar-Aumatell, and E. Rubinat-Arnaldo. 2022. "Defining Competencies for Nurse Anaesthetists: A Delphi Study." *Journal of Advanced Nursing* 78, no. 11: 3696–3709. https://doi.org/10.1111/jan.15348.

Sastre-Fullana, P., J. M. Morales-Asencio, A. Sesé-Abad, M. Bennasar-Veny, J. C. Fernández-Domínguez, and J. De Pedro-Gómez. 2017. "Advanced Practice Nursing Competency Assessment Instrument (APN-CAI): Clinimetric Validation." *BMJ Open* 7, no. 2: e013659. https://doi.org/10.1136/bmjopen-2016-013659.

Serra, D., and J. Serra. 2003. *La guerra quotidiana. Testimonis D'una Ciutat en guerra (Barcelona 1936–1939)*. Columna Edicions.

Sevilla Guerra, S., and A. Zabalegui. 2016. "Role Delineation Study of Advanced Practice Nursing, a Cross-sectional Study of Practice Domains and Trends in Role Functions." *International Journal of Integrated Care* 16, no. 6: 62. https://doi.org/10.5334/ijic.3014.

Smith, A. F., M. Kane, and R. Milne. 2004. "Comparative Effectiveness and Safety of Physician and Nurse Anaesthetists: a Narrative Systematic Review." *British Journal of Anaesthesia* 93, no. 4: 540–545. https://doi.org/10.1093/bja/aeh240.

Soto, P., P. Masalan, and S. Barrios. 2018. "La Educación en Salud, Un Elemento central del cuidado de enfermería." *Revista Médica Clínica Las Condes* 29, no. 3: 288–300. https://doi.org/10.1016/j.rmclc.2018.05.001.

Sun, E. C., T. R. Miller, J. Moshfegh, and L. C. Baker. 2018. "Anesthesia Care Team Composition and Surgical Outcomes." *Anesthesiology* 129, no. 4: 700–709. https://doi.org/10.1097/ALN.0000000000002275.

Sundqvist, A. S., and A. A. Carlsson. 2014. "Holding the Patient's Life in My Hands: Swedish Registered Nurse Anaesthetists' perspective of Advocacy." *Scandinavian Journal of Caring Sciences* 28, no. 2: 281–288. https://doi.org/10.1111/scs.12057.

Syndicat National des Infirmier(e)s-Anesthestits-es. 2019. Great Survey French Nurse Anesthetists 2018. https://ifna.site/app/uploads/2019/02/SNIA_Enquete_ENG_IFNA.pdf.

Tutosaus Gómez, J. D., J. Morán-Barrios, and F. Pérez Iglesias. 2018. "Historia de la formación sanitaria especializada en España y Sus Claves Docentes." *Educación Médica* 19, no. 4: 229–234. https://doi.org/10.1016/J.EDUMED.2017.03.023.

Urra, E., A. Jana, and M. García. 2011. "Algunos Aspectos Esenciales Del Pensamiento de Jean Watson y Su Teoría de Cuidados Transpersonales." *Ciencia y Enfermería XVII* 17: 11–22. https://doi.org/10.4067/S0717-95532011000300002.

Valls, R. 2008. Les infermeres catalanes durant la Guerra Cívil.

Wilson, W. O. 2013. "Nurse Anesthesia. A Past, Present, and Future Perspective." *Nursing Clinics of North America* 10, no. 2: 205. https://doi.org/10.1016/j.nepr.2010.04.002.

Supporting Information

Additional supporting information can be found online in the Supporting Information section.

Appendix 1. Semi-structured focus group script.