# Advanced Practice Nursing and Advanced Midwifery Practice in Flanders.

## NURSES AND MIDWIVES AT THE CROSSROADS OF EXPERT PRACTICE, RESEARCH, INNOVATION, AND LEADERSHIP

**Régine Goemaes**

FACULTY OF MEDICINE AND HEALTH SCIENCES

GHENT UNIVERSITY

**Promotor: Prof. dr. Ann Van Hecke**
**Co-promotor: Prof. dr. Dimitri Beeckman**

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# ADVANCED PRACTICE NURSING AND ADVANCED MIDWIFERY PRACTICE IN FLANDERS

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THESIS SUBMITTED TO FULFILL THE REQUIREMENTS FOR THE DEGREE OF DOCTOR IN HEALTH SCIENCES

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**Advanced Practice Nursing and Advanced Midwifery Practice in Flanders. Nurses and midwives at the crossroads of expert practice, research, innovation, and leadership**

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*“The hardest mountain to climb is the one within.”*

J. Lynn

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## MEMBERS OF THE GUIDANCE COMMITTEE

| | |
|---|---|
| Promotor | Prof. dr. Ann Van Hecke<br>University Centre for Nursing and Midwifery<br>Department of Public Health and Primary Care<br>Faculty of Medicine and Health Sciences<br>Ghent University, Belgium |
| Co-promotor | Prof. dr. Dimitri Beeckman<br>University Centre for Nursing and Midwifery<br>Department of Public Health and Primary Care<br>Faculty of Medicine and Health Sciences<br>Ghent University, Belgium |
| Other members of the guidance committee | Prof. dr. Sofie Verhaeghe<br>University Centre for Nursing and Midwifery<br>Department of Public Health and Primary Care<br>Faculty of Medicine and Health Sciences<br>Ghent University, Belgium |
| | Prof. dr. Jill Shawe<br>The Institute for Health and Community<br>Faculty of Health and Human Sciences<br>University of Plymouth, United Kingdom |

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| Prof. dr. Peter Van Bogaert | Department of Midwifery and Nursing Sciences<br>Faculty of Medicine<br>University of Antwerp, Belgium |

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| ACM | Australian College of Midwives |
| ACNM | American College of Nurse Midwives |
| AMP | Advanced Midwife Practitioner |
| AP(R)N | Advanced Practice (Registered) Nurse |
| CA | Concept Analysis |
| CI | confidence interval |
| CINAHL | Cumulative Index of Nursing and Allied Health Literature |
| CM | Consultant Midwife |
| CMS | Clinical Midwife Specialist |
| CNM | Certified Nurse Midwife |
| CNO | Chief Nursing Officer |
| CNS | Clinical Nurse Specialist |
| COREQ | Consolidated Criteria for Reporting Qualitative Research |
| CRNA | Certified Registered Nurse Anesthetist |
| CVI | content validity index |
| DNP | Doctor of Nursing Practice |
| ECTS | European Credit Transfer System |
| EMBASE | Excerpta Medica dataBASE |
| ICM | International Confederation of Midwives |
| ICN | International Council of Nurses |
| IOM | Institute of Medicine |
| MeSH | Medical Subject Heading |
| NCNM | National Council for the Professional Development of Nursing and Midwifery |
| NEMIR | European Network for Midwifery Regulators |
| NMBA | Nursing and Midwifery Board of Australia |
| NMBI | Nursing and Midwifery Board of Ireland |
| NP | Nurse Practitioner |
| OR | odds ratio |

| | |
|---|---|
| PEPPA | Participatory, Evidence-based, Patient-focused Process for Advanced practice nursing role development, implementation, and evaluation |
| SPSS | Statistical Package for the Social Sciences |
| UKCC | United Kingdom Central Council for Nursing, Midwifery and Health Visiting |

# CHAPTER 1

# GENERAL INTRODUCTION

Advanced practice is a term used in several healthcare disciplines (e.g. nursing, occupational therapy, dietetics) to distinguish a practice level from basic practice through specialization and expansion of knowledge, skills, and role autonomy (Bryant-Lukosius et al., 2004, Broome, 2015; Steer et al., 2015). The term 'Advanced Practice Nursing' first appeared in the nursing literature in the 1980s (Ruel & Motyka, 2009). The introduction and development of "Advanced Practice Nursing" was seen as one of the most important developments in nursing during the twentieth century (Oddsdottir & Sveinsdottir, 2011). Since its first introduction in the United States, an increasing number of countries have implemented advanced practitioner roles for a number of reasons, such as workforce and workload challenges (Llahana et al., 2019; Maier et al., 2016). It is estimated that nearly 70% of hospitals in the world have some form of advanced practice (Parker & Hill, 2017). The implementation of advanced practice nurse (APN) roles in the healthcare contexts of approximately 70 countries has led to confusion about advanced practitioners' titles, roles and scope of practice among nurses, patients, physicians, administrators, and other healthcare professionals internationally (Carryer et al., 2018; ICN, 2015; Jokiniemi et al., 2012; Llahana et al., 2019). As a lack of conceptual clarity inhibits role development, credentialing, international mobility and targeted political action (Llahana et al., 2019), efforts have been made to clarify the global concept of advanced practice nursing and the content of APN roles through concept analyses (Dowling et al., 2013; Ruel & Motyka, 2016) and examinations of APNs' practice profile (Gardner et al., 2016; Sevilla Guerra et al., 2018), and time use (Darmody, 2005, 2011; Kilpatrick et al., 2013; Leary et al., 2008; Mayo et al., 2010; Norton et al., 2012; Oddsdóttir & Sveinsdottir, 2011; Ream et al., 2009; Wickham, 2011). In addition, increasing attention has been paid to conditions for the implementation of APN and advanced midwife practitioner (AMP) roles as literature has shown that implementation of such roles is complex (Bryant-Lukosius et al., 2004; Furlong & Smith, 2005; De Geest et al., 2008).

In recent years, the focus in the advanced practice literature has shifted towards APNs' and AMPs' impact on a clinical, professional, and healthcare organisational level (Begley et al., 2014; Gerrish et al., 2011; Litchman et al., 2018; Wong et al., 2013; Woo et al., 2017), and towards their capability to use leadership skills (Elliott et al., 2016; Gaylord & Grace, 2014; Lamb et al., 2018). Despite this increase in the advanced practice literature, there are still a number of lacunae in our understanding of APN and AMP roles on a national and international level. In order to elucidate some of these lacunae, this dissertation draws from the literature and from well-established theoretical frameworks defining the primary criteria for advanced practice nursing and a set of core competencies (Hamric et al., 2014), and describing factors influencing the implementation of APN and AMP roles (De Geest et al., 2008; Bryant-Lukosius et al., 2004).

This introductory chapter consists of three sections. The first section gives an overview of the definitions of advanced practice nursing and advanced midwifery practice, and a description of the most common types of APN roles. This section

also deals with theoretical advanced practice models and the educational preparation and requirements for APNs and AMPs. The second section describes reasons for advanced practitioner role implementation internationally and in Belgium from a historical perspective. Furthermore, it provides information on barriers, facilitators, and frameworks for the implementation of APN and AMP roles. A last section addresses the lacunae that were examined and the research questions that were used to make a contribution to filling these knowledge gaps.

# 1. Conceptualisation of advanced practice: definitions and roles

## 1.1 Advanced Practice Nursing

Since the 1990s, efforts have been made to reach a consensus on the definition of advanced practice nursing (Tracy & O'Grady, 2019). As advanced practitioner roles were implemented in a growing number of country-specific healthcare contexts, the concept of advanced practice nursing became increasingly unclear (Jokiniemi et al., 2012). Additionally, the term "advanced practice nursing" is sometimes used interchangeably with the term "advanced nursing practice". However, according to Bryant-Lukosius et al. (2004) the term "advanced practice nursing" is broader than "advanced nursing practice". The use of the latter term places particular emphasis on what APNs "do" in their role. This implies activities in multiple role domains, such as clinical practice, research, and leadership. The term "advanced practice nursing", on the other hand, not only focuses on the activities of APNs, but also on the contexts in which these roles are developed, implemented and evaluated (Bryant-Lukosius et al., 2014). As the focus of this dissertation is on advanced roles in which nurses and midwives execute activities in multiple role domains, as well as on the broader contexts in which these roles are executed and implemented, the term "advanced practice nursing" will be used throughout the manuscript.

Despite the execution of several concept analyses in an attempt to clarify the concept of advanced practice nursing and to bring stability and universality to its meaning (Dowling et al., 2013; Ruel & Motyka, 2009), full conceptual clarity is still lacking (Tracy & O'Grady, 2019). As advanced practice nursing continues to be defined in various ways in the nursing literature (Tracy & O'Grady, 2019), the most frequently used definitions are given.

Advanced practice nursing is often defined as "*a level of nursing practice that utilizes extended and expanded skills, experience and knowledge in assessment, diagnosis, planning, implementation and evaluation of the care required*" (Australian Nursing and Midwifery Council, 2009). Hamric et al. (2014) formulated the following conceptual definition: "*Advanced practice nursing is the patient-focused application of an expanded range of competencies to improve health outcomes for patients and populations in a specialized clinical area of the larger discipline of nursing*".

An APN is defined by the International Council of Nurses (ICN) as "*a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which she/he is credentialed to practice. A master's degree is recommended for entry level*" (Shober & Affara, 2006). However, the ICN is currently developing a new definition, in which a Master of Science degree becomes mandatory. Graduate education has proven important for advanced practitioner role enactment, as shown in studies that compared master's and non-master's prepared nurses (Bryant-Lukosius et al., 2015). The provisional new ICN definition is as follows: "*An Advanced Practice Nurse (APN) is a qualified nurse who has acquired, through a master's degree, the expert knowledge base, complex decision-making skills and clinical competencies for advanced nursing practice, the characteristics of which are shaped by the context of which they are credentialed to practice*" (Rogers, 2019). In the past decade however, some organisations, among which the American Association of Colleges of Nursing, have even recommended a (practice-based) doctorate (e.g. Doctor of Nursing Practice or DNP) or PhD as a minimum entry level for APNs into practice (AACN, 2004; Begley et al., 2007; Wilson 2018). Due to their academic preparation, whether a Master of Science or doctoral degree, APNs are familiar with both (nursing) science and clinical practice. As a result of APNs' educational preparation at master's level, they are able to critically evaluate publications and to distinguish between reliable sources and information that should be treated with caution. They can put scientific knowledge into practice, and they are able to integrate and conceptualize practical situations in such a way that these situations become accessible for scientific purposes. As clinical practitioners and healthcare providers, APNs understand the challenges of working under time pressure and with limited resources, which are also encountered by nurses. They know what it is to act in complex care situations and how ambiguity often prevails in practical situations. Their knowledge of both the scientific world and the field of clinical practice make APNs ideally placed to act as bridge builders between the scientific community and clinical practitioners. As such, they can connect the academic world with clinical practice not only in their own work, but also in the work of the nurses who they support (Grypdonck et al., 2002).

The term "advanced practice nursing" is an "umbrella concept" that covers a range of APN roles. In 2004, the American Association of Colleges of Nursing (AACN) and the National Organisation of Nurse Practitioner Faculties (NONPF) defined four major "advanced practice registered nurse (APRN)" roles: certified registered nurse anesthetists (CRNAs), certified nurse-midwives (CNMs), nurse practitioners (NPs), and clinical nurse specialists (CNSs) (Hamric et al., 2014; Ruel and Motyka, 2009). Most common roles are the NPs and the CNSs. Certified registered nurse anesthetists are competent to provide the entire spectrum of patients' anaesthesia (-related) care. Certified nurse-midwives are trained to take responsibility for a wide range of healthcare services to women throughout the life span, from family planning services

and preconception care, over prenatal, childbirth and postpartum care to gynaecologic care (APRN Consensus Work Group, 2008). The differences between NPs and CNSs are less clear as they share common role competencies. As shown in figure 1, CNSs are more involved in professional development, organisational leadership, research, and education than NPs. The latter use a higher percentage of their working time on clinical practice than CNSs. In clinical practice, NPs work more generically within a variety of fields of practice and with multiple practice populations than CNSs, who most often work within a specialist field of practice and in defined populations (e.g. oncology, pain management). Furthermore, NPs have a higher focus on task substitution of physicians (e.g. diagnosing and treating patients with acute and chronic diseases), while CNSs focus more on clinical activities that are complementary to physician care (APRN Consensus Work Group, 2008; Donald et al., 2010; Hamric et al., 2014; Rogers, 2019). However, CNSs and NPs balance on a continuum of APN roles, leading to blended CNS/NP roles in several countries (Donald et al., 2010).

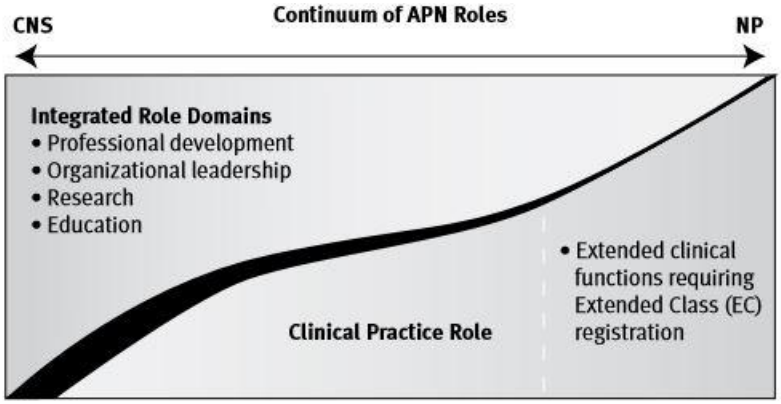


Figure 1. Differences between CNS and NP roles (Donald et al., 2010)

Since the increase in the number of countries in which APN roles have been implemented, different titles have been used for similar roles, which has added to confusion in APN titles, roles and scope of practice. In Australia for example, CNSs are called “clinical nurse consultants” (Cashin et al., 2015). According to Pulcini et al. (2010), a total of 13 different titles for APN positions were identified in 32 countries. Leary et al. (2017) found that 595 job titles were used for specialist posts in the UK alone (e.g. CNS, nurse specialist/specialist nurse, advanced nurse practitioner, NP). In addition to different titles being used for similar roles, new roles have arisen. For example, the clinical nurse research consultant is a doctorally prepared clinical expert who focuses on the research/practice gap and on facilitating evidence-based clinical practice (Currey et al., 2011).

In addition to concept analyses and examinations of APNs' practice profile, several conceptual advanced practice nursing models have been developed to cultivate a common language (Hamric et al., 2014). One of the earliest and most frequently referenced models is Hamric's model as shown in Figure 2. The model defines three primary criteria for advanced practice nursing: graduate education, certification in the specialist field of practice, and a focus on clinical practice with patients. Direct clinical practice is seen as the central competency, on which the other six core competencies depend: guidance and coaching, consultation, evidence-based practice, leadership, collaboration, and ethical decision-making skills (Tracy & O'Grady, 2019).

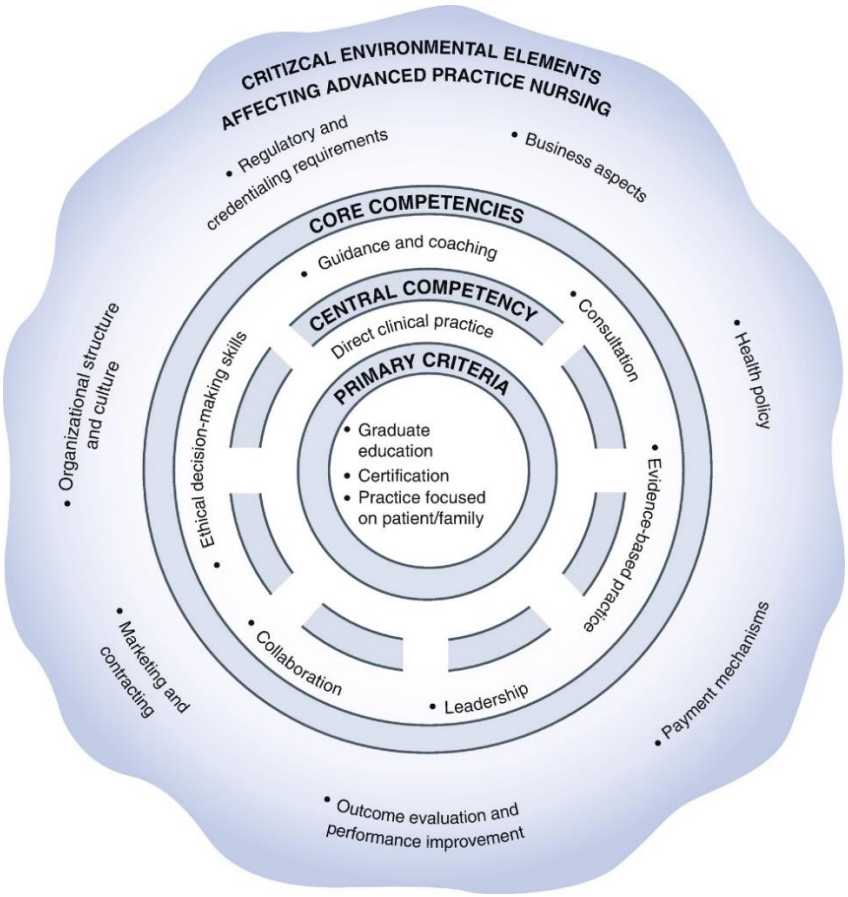


Figure 2. Hamric's model of advanced practice nursing (Tracy & O'Grady, 2019)

## 1.2 Advanced Midwifery Practice

Compared to advanced practice nursing and with the exception of CNMs as one of the four major APN roles defined by the APRN Consensus Work Group & National Council of State Boards of Nursing APRN Advisory Committee (2008), advanced midwifery practice is a more recent development. Hence, it has been explored to a lesser extent. Similar to advanced practice nursing, new or expanded roles of midwives are seen as essential for the contribution to high quality healthcare

and for the development of the profession (Begley et al., 2007). However, advanced midwifery practice seems to be a controversial notion in midwifery and the necessity and desirability of AMPs have been questioned in several countries (e.g. Australia, New Zealand, United Kingdom). Arguments used in this discussion were: creating advanced levels of practice could generate a midwifery 'elite' (Lewis, 2000; Lessing-Turner, 2001); all qualified midwives function at an advanced level of practice if they practice autonomously and to the full scope of their practice (Smith et al., 2010).

In contrast to advanced practice nursing, a limited number of countries have implemented AMP roles (e.g. Ireland, the United Kingdom, South Africa), despite their contribution to the development of the profession and high quality healthcare (Department of Health and Social Care, 1999; Begley et al., 2007; National Council for the Professional Development of Nursing and Midwifery, 2008; Robinson, 2012). When further development of advanced midwifery practice is desirable, clarification of the concept is a pivotal first step (Ruel & Motyka, 2009). Concepts are an essential structural component of theory development. They make an important contribution to the expansion and development of midwifery knowledge through the enhancement of the theoretical foundation of research and practice (Larkin et al., 2009). Additionally, a clear conceptualisation of advanced midwifery practice is essential to avoid misinterpretations and disagreements within the midwifery profession (Ruel & Motyka, 2009).

Clear concepts are also important for the achievement of legitimacy in other healthcare professions (e.g. obstetricians, gynaecologists, general practitioners), in society, and in policy (Hanson & Hamric, 2003; Silva & Sorrell, 1992). Clarification of the advanced midwifery practice concept can prevent misguided interpretations regarding the purpose of AMPs and facilitate the implementation of these roles (Bryant-Lukosius et al., 2004). As a clear definition and meaning of the concept is lacking on an international level, the first research aim of this dissertation is to clarify the definition of advanced midwifery practice.

## 2. Implementation of advanced practice roles

### 2.1 Reasons for APN and AMP role implementation

When advanced practitioner roles first emerged in the USA, they were introduced into the healthcare system to increase the number of practitioners in rural areas and underserved populations (Torrens et al., 2019). Since then, advanced practitioner roles have been implemented worldwide as healthcare systems globally are confronted with workforce and workload challenges and undergo major changes (Llahana et al., 2019). These changes are triggered by economic challenges such as spiraling healthcare costs, pressures of an ageing population, the growing number of people living with increasing complexity of illness, health and safety concerns associated with stressful work environments, an increasing

number of formal leaders or operational managers (e.g. head nurses and midwives, middle managers) and clinical leaders (e.g. senior nurses and midwives) nearing retirement and projected workforce shortages of physicians, nurses and midwives (Lamb et al., 2018; Llahana et al., 2019; Wong et al., 2013). The implementation of advanced practitioner roles is seen as a way to manage these challenges by safeguarding a sufficient number of healthcare providers with clinical leadership competencies. Moreover, APNs and AMPs could support the decreasing number of operational managers who have to manage larger departments by taking responsibility for clinical leadership activities. As such, advanced practitioners and operational managers could be seen as powerful tandems to improve the quality, efficiency, and sustainability of healthcare services (Bryant-Lukosius et al, 2014).

Increasing attention has been paid to measuring the impact of advanced practitioners on a clinical, professional and organisational healthcare level (Begley, Murphy, Higgins, & Cooney, 2014). A growing number of publications show that advanced practitioner care is superior to the usual/physician-only care, for example, in reducing mortality in intensive care units (Woo, Lee, & Tam, 2017), post-discharge mortality in surgical patients (Bryant-Lukosius et al., 2015), hospital readmission rates (Chavez et al., 2018; Mora et al., 2017) and invasive interventions during childbirth (Newhouse et al., 2011). Advanced practitioner care improves adherence to treatment recommendations, the number of immunized infants at 8 weeks (Bryant-Lukosius et al., 2015) and clinical outcomes such as blood pressure, glycated haemoglobin levels and lipid profile in elderly patients (Chavez et al., 2018). Advanced practitioner care also reduces the hospital length of stay for very low birthweight infants and post-partum mothers (Bryant-Lukosius et al., 2015), reduces waiting lists (Begley et al., 2014) and shortens waiting time during service delivery (Jennings et al., 2015). In addition, APN/AMP care improves the continuity of care (Begley et al., 2014) and patient satisfaction (Jennings et al., 2015; Woo et al., 2017).

## 2.2 Frameworks for APN and AMP role implementation

Several frameworks for the development, implementation and evaluation of advanced practice nursing roles have been developed, as the implementation of such roles is complex (Bryant-Lukosius et al., 2004; Furlong and Smith, 2005; De Geest et al., 2008). Figure 3 shows the PEPPA framework developed by Bryant-Lukosius et al. (2004), which is one of the most frequently used and cited frameworks to guide the implementation of advanced practitioner roles. The framework was designed to overcome implementation barriers by understanding the environments in which advanced practitioner roles are implemented and by involving environmental stakeholders as participants in the process from an early stage (Bryant-Lukosius et al., 2004).

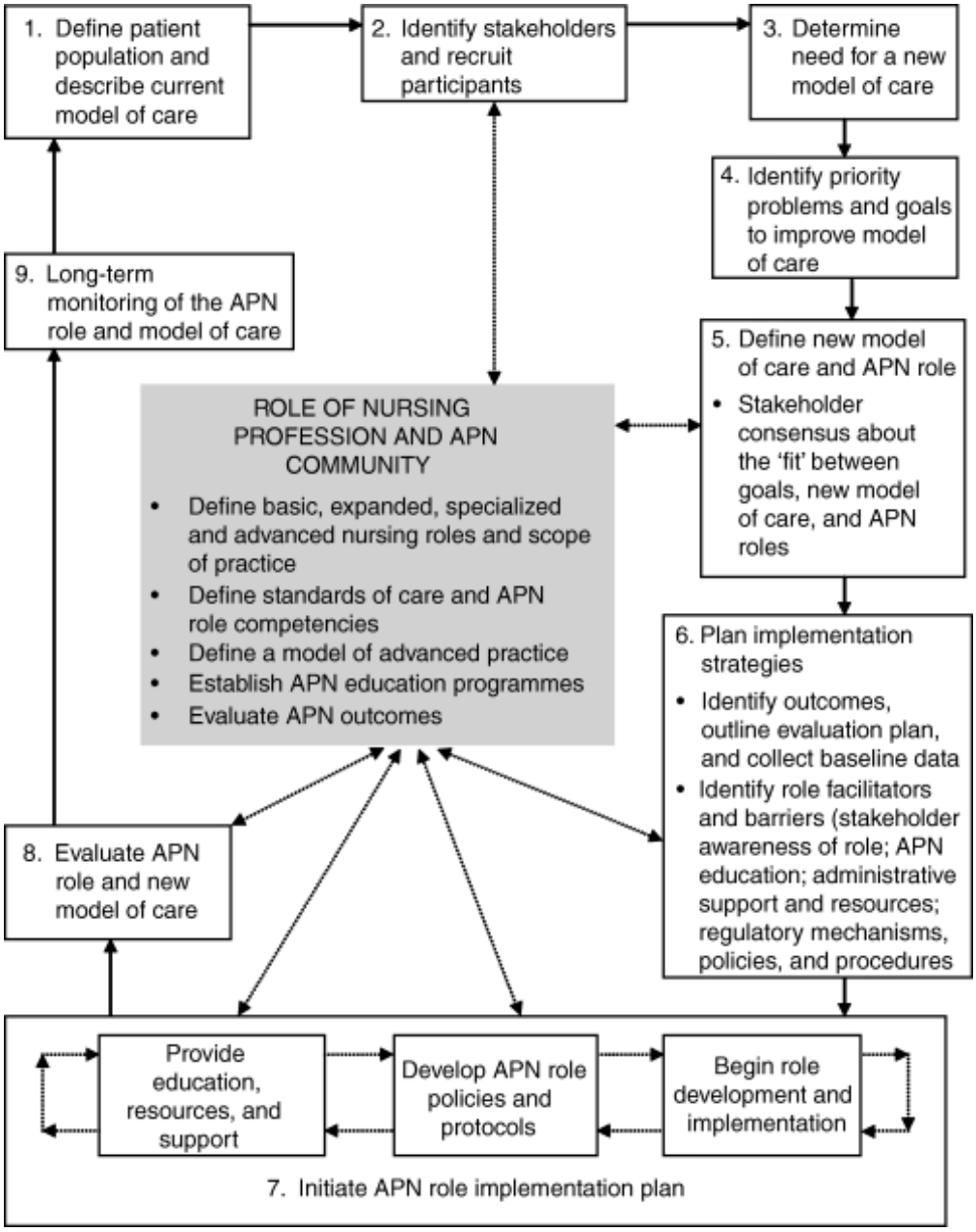


Figure 3. The participatory, evidence-based, patient-focused process for advanced practice nursing role development, implementation, and evaluation (PEPPA framework; Bryant-Lukosius et al., 2004)

While the PEPPA framework is more focused on the implementation of advanced practitioner roles in healthcare organisations, the framework by De Geest et al. (2008) is intended to assist in the introduction and development of advanced practitioner roles in a particular healthcare system. Therefore, the framework shown in Figure 4 focuses on five

drivers: (1) the healthcare needs of the population, (2) education, (3) workforce, (4) practice patterns, and (5) legal and health policy.

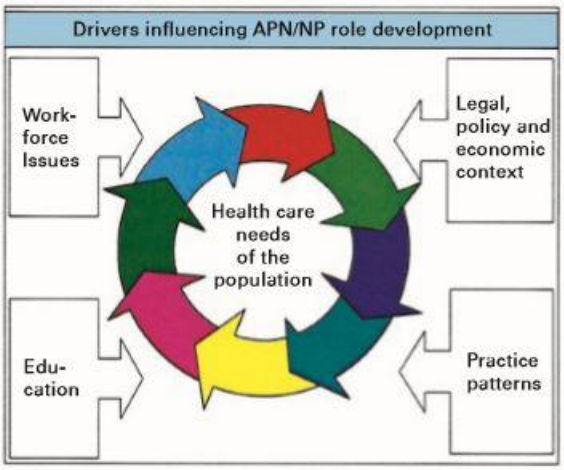


Figure 4. Drivers influencing APN/NP role development (De Geest et al., 2008)

These frameworks recommend the need for a new model of care involving advanced practitioner roles and the identification of role barriers and facilitators as two vital steps in the implementation process (Bryant-Lukosius et al., 2004; Furlong and Smith, 2005; De Geest et al., 2008).

## 2.3 Barriers and facilitators for APN and AMP role implementation

Numerous factors influencing the implementation of APN roles on a healthcare systems, healthcare organizational, team, and advanced practitioner level are found in the literature (Elliott et al., 2016). Barriers include role position and collaboration difficulties, the pioneering and demanding nature of APN roles, non-coherent organization politics, lack of support from senior management and colleagues, lack of opportunities to participate at a strategic level, educational defects, social challenges, and inadequate resources (Elliott et al., 2016; Jokiniemi et al., 2015). Factors that facilitate the implementation of APN roles are: national accreditation requirements; role clarity; multiple advanced practitioners in a practice setting; organizational, management, nursing and physician support; professional development opportunities; master's level education, and having explicit nursing experience (Elliott et al., 2016; Jokiniemi et al., 2015). Sangster-Gormley et al. (2011) identified many of the same factors and concluded that three concepts are essential in influencing APN role implementation: involvement, acceptance, and intention. Firstly, involvement means that stakeholders are participating in the implementation of APN roles from its initiation. Secondly, acceptance implies that the work of APNs is

recognized and that other healthcare professionals are willing to collaborate with APNs. Thirdly, intention refers to the definition of the APN role and to role expectations of other healthcare providers (Sangster-Gormley et al., 2011).

Although several studies have examined barriers and facilitators for the implementation of APN roles, there is little international literature that specifically discusses implementation processes of AMP roles. Data on the feasibility, barriers and facilitators for the implementation of AMP roles are lacking internationally. Despite the fact that many of the factors influencing APN role implementation might also impede or facilitate the implementation of AMP roles, there might be discipline-specific issues that have not been identified.

## 2.4 Extent of APN and AMP role implementation: task performance and time use

Besides the execution of concept analyses and the development of conceptual frameworks to clarify the global concept of APN, examinations of APNs' practice profile and time use have also been undertaken (Gardner et al., 2016; Sevilla Guerra et al., 2018).

Several studies have examined the professional time investment of APNs using a variety of self-reporting methods, such as diaries (Ream et al., 2009; Norton et al., 2012; Oddsdóttir & Sveinsdottir, 2011), instruments to register the frequency of activities (Becker et al., 2006; Leary et al., 2008; Martin-Misener et al., 2015; Wickham, 2011), or the estimated proportion of time spent on APN roles (Darmody, 2011; Johnson et al., 2016; Kilpatrick et al., 2013; Kleinpell et al., 2012; Lincoln, 2000; Mayo et al., 2010; Rosenfeld et al., 2003; Wickham, 2011; Woo et al., 2019). However, several limitations in these studies need to be considered, such as a lack of random selection of the sample, unclear inclusion criteria, a lack of reasons explaining attrition, and a risk of self-reporting bias. Only the descriptive pilot study of Darmody (2005) used direct, non-participant observations and time study to record activities and time for a total of 20 hours of observation of five CNSs in acute care in one academic medical centre in the United States. No studies have been executed to examine the detailed time use of APNs using non-participant observations of a randomly selected and larger sample of APNs with diverse areas of specialization in both academic and non-academic hospitals. In addition, only one previous study (Oddsdóttir & Sveinsdottir, 2011) used a framework that explicitly categorised activities in advanced practice nursing roles, domains, and categories.

Furthermore, studies examining factors associated with differences in APNs' practice profile and time use are scarce. Examples of such factors could be the type of healthcare organisation, number of years of work experience, type of

hierarchical supervisor, and type of functional supervisor, as these factors are found in the literature as either barriers or enablers of APNs' role enactment, development, and implementation (Begley et al., 2014; Elliott et al., 2016; Fealy et al., 2015; Franks, 2014; Mullen, Gavin-Daley, Kilgannon, & Swift, 2011; Woodward et al., 2005). However, the impact of these factors on APNs' practice profile and time use is currently unclear.

## 2.5 APN and AMP role implementation in Belgium

As in many countries, the introduction of advanced practice roles in healthcare is frequently discussed in Belgium (Belgian Federal Public Service Health Food Chain Safety & Environment, 2016). The implementation of academic master's programmes for nurses and midwives in the 1980s has led to the unofficial introduction of these roles (De Geest et al., 2008). Advanced practitioner roles in Belgium are mainly implemented in hospital settings. Despite the progress in educational programmes and professional practice, the legal regulation and formal recognition of APN and AMP roles in Belgium are limited. However, a legal framework for APNs in Belgium was introduced by the Law of the 22nd of April 2019 on the modification of the Law of the 10th of May 2015 on the Practice of the Healthcare Professions. Until the change in legislation in April 2019, the healthcare assistant and the nurse were the only two professional levels of nursing defined by law, with the latter having the opportunity of acquiring particular professional competencies or a specific professional title related to a certain degree of specialization. The Law of the 22nd of April 2019 has however introduced a legal framework that defines the legal competencies to practice as an APN in Belgian healthcare settings. Furthermore, it is stipulated that the APN is a nurse with a master's degree and with the ability to provide complex nursing care and to execute certain medical interventions.

The introduction of APN roles in Belgian legislation is a major step forward in the recognition of APNs. Nevertheless, some unclarities regarding the interpretation of the new legal framework for APN roles remain. Firstly, the following vague terms used in the Law of the 22nd of April 2019 should be clearly defined: "complex" nursing care, medical acts by the APN for "a specific target group of patients", "medical interventions" by the APN for which a nurse is not competent to execute them, and the need for APNs to "work in close concertation with the physician and/or other healthcare professionals". The latter term is a new concept in Belgian health legislation. Secondly, the organizational relationship between the APN and other nurses should be clarified, as the legislator stipulated that there is no real hierarchical difference between nurses and APNs. Thirdly, the new legal framework only covers the clinical activities of the APN, but does not provide a legal basis for the non-clinical activities. Finally, the criteria that nurses will have to meet to be able to use the APN title have yet to be established through a Royal Decree. All of these unclarities should be addressed to avoid uncertainties. Clarity regarding the legal framework is a prerequisite for the implementation of the legal framework into clinical practice. In addition, a formal system or regulatory body for the registration and certification of APNs and AMPs has not been established. This

results in confusion regarding role expectations and performance among APNs/AMPs, their hierarchical and functional supervisors, and nurses and midwives not in advanced practice roles. As the task performance, self-reported competency level, and time use of advanced practitioners in Belgian hospitals are currently unclear, greater knowledge and understanding are required about the extent to which APNs and AMPs perform advanced practice activities in their current positions, and how they divide their daily working time over the advanced practice role domains. This information is important to support a legitimate debate about job differentiation and task reallocation in healthcare, and to provide a basis for accurate job descriptions and for the development of advanced practitioner curricula and certification requirements (Sastre-Fullana et al., 2017). In addition, the identification of factors associated with task non-execution and with differences in APNs' time use could substantiate measures allowing advanced practitioners to reach their full potential as strong sources for increased access to quality healthcare and as leaders within and beyond the healthcare organisation. Therefore, one of the research aims of this dissertation is to explore the practice profile, competency level, and time use of APNs and AMPs in Flanders, the northern part of Belgium. As studies examining factors associated with task non-execution and professional time use of APNs and AMPs are scarce, the results of these studies could contribute to the comparison of advanced practice roles internationally.

Additionally, data on the feasibility, barriers and facilitators for the implementation of AMP roles are lacking for Belgian healthcare settings, notwithstanding elements that support a discussion on the implementation of AMP roles. The extension of legal competencies of Belgian midwives since 2006 (e.g. prescription authority) has intensified a discussion on the duration and level of midwifery education in Belgium (Federal Council for Midwives, 2016). This education consists of a three-year direct-entry midwifery programme equivalent to 180 ECTS and leads to a professional bachelor's degree in Flanders. In the Walloon region, the education consists of a four-year bachelor programme equivalent to 240 ECTS, in which students spend one year on nursing, one year on nursing and midwifery, and two years on midwifery (Emons & Luiten, 2001). In addition, there is a lack of formally acknowledged discipline specific clinical positions in which master educated midwives can structurally contribute to care innovation, quality improvement and evidence. The implementation of such positions is worth exploring, as midwifery practice in Belgium and internationally has become more complex over the past decades. Considerable demands are being placed on midwives worldwide to meet several healthcare-related challenges. Firstly, epidemiological trends such as the rising number of women giving birth at an advanced age and increased rates of pre-existing pathologies (e.g. obesity, diabetes) heighten the risk of maternal and infant complications (EuroPeristat Project, 2018). Secondly, socio-economic challenges are increasing, confronting midwives with more women living in difficult social situations and an increase in complexity of populations due to augmented migration and diversity (Mestdagh et al., 2019; Philimore, 2016). Thirdly, technological advances in genetics (e.g. non-invasive prenatal testing,

whole genome sequencing), reproductive medicine, foetal and neonatal medicine strengthen the need for prenatal and postnatal (genetic) counselling and for healthcare professionals to be competent to guide patients in informed decision making before and after screening and diagnostic tests, and treatments (Westerfield et al., 2014). As midwives are confronted with the increasing complexity of ethical problems due to these technological advances, they need good ethical competencies (Oelhafen et al., 2017). Fourthly, societal expectations of healthcare delivery have changed. There is an evolution towards more person-centred care, continuity of care, patient participation, and interdisciplinary care (Bombard et al., 2018; Nancarrow et al., 2013; Sandall et al., 2016). In addition, the need for cost-effective and continuous accessible healthcare has led to policy developments such as a shorter hospital stay for mother and baby after an uncomplicated pregnancy and birth, the necessity of effective seamless care, and the importance of high quality accessible primary care (Akselsdottir et al., 2013; Bowers and Cheyne, 2016; Bowers et al., 2018; Ford et al., 2012).

As the implementation of AMP roles is still in its infancy in Belgium, therefore, one of the research aims of this dissertation is to explore the factors influencing the implementation of AMP roles in Flanders, the Dutch-speaking part of Belgium. This knowledge will enhance the limited knowledge on AMP role implementation internationally.

## 3. Research questions

A last section of this chapter addresses the lacunae and the research questions that were examined to make a contribution to filling the identified knowledge gaps. The main objectives of the dissertation were (1) to gain insight into the concept of advanced midwifery practice, (2) to examine barriers and facilitators for the implementation of AMPs in Flanders, and (3) to investigate the practice profile and competency level of APNs and AMPs, and the time use of APNs in Flanders.

These objectives resulted in the following research questions:

1. What are the components of the "advanced midwifery practice" concept? (Chapter 2)
2. Which factors influence the implementation of AMP roles in Flanders? (Chapter 3)
3. What is the practice profile of APNs and AMPs in Flanders? (Chapter 4)
4. To what extent do APNs and AMPs in Flanders feel competent in advanced practice task performance? (Chapter 4)
5. Which factors are associated with task non-execution of APNs and AMPs in Flanders? (Chapter 4)
6. What is the professional time use of APNs in Flanders? (Chapter 5)
7. Which factors influence the time use of APNs in Flanders? (Chapter 5)
8. What are challenges and opportunities for the implementation of AMPs in Flanders? (Chapter 6)

Following chapter 1 (i.e. general introduction), chapter 2 describes the results of a concept analysis that was executed to clarify advanced midwifery practice and identify its components. Chapter 3 presents the results of semi-structured individual face-to-face and focus group interviews to explore factors influencing the implementation of AMP roles in Flanders. Chapter 4 provides the results of a cross-sectional study among APNs and AMPs in Flanders to explore their tasks and competencies. In chapter 5, the results of a cross-sectional study among APNs in Flanders to examine their time use are given. Chapter 6 discusses the current knowledge and gaps with regard to the implementation of AMP roles in Belgium from a legislation/policy, education, workforce, and financial and economic point of view. Finally, chapter 7 provides a general discussion of the study results, recommendations for policy and clinical practice, education, and research.
An overview of the objective of every chapter, also describing the used methodology can be found in Table 1.

Table 1. Overview of the studies and methods used in each chapter of this dissertation

| Chapter | Title | Aim | Methodology |
|---|---|---|---|
| 2 | Advanced midwifery practice: An evolutionary concept analysis | To clarify the concept of advanced midwifery practice and identify its components | Literature review using Rodgers' evolutionary method of concept analysis |
| 3 | Factors influencing the implementation of advanced midwife practitioners in healthcare settings: A qualitative study | To investigate factors influencing the implementation of AMP roles | Qualitative study using semi-structured individual face-to-face interviews and focus group interviews with 32 key stakeholders in university and peripheral hospitals, primary care, midwifery education, and midwifery policy in Flanders |
| 4 | Leadership in nursing and midwifery: Activities and associated competencies of advanced practice nurses and midwives | To explore the practice profile and competencies of APNs and AMPs, and factors associated with task non-execution | A questionnaire-based, cross-sectional study among 63 APNs and AMPs in university and peripheral hospitals in Flanders |
| 5 | Time use of advanced practice nurses in hospitals: A cross-sectional study | To examine the use of time by APNs, and time use differences according to type of healthcare organisation, work experience, and supervisor | A cross-sectional time and motion study using structured, non-participant observations of 37 APNs in university and peripheral hospitals in Flanders |
| 6 | Sustaining the quality of midwifery practice in Belgium: challenges and opportunities for advanced midwife practitioners in Belgium | To discuss the implementation of AMP roles in Belgium as a stimulus for debate within the profession | A discussion paper |

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# CHAPTER 2

# ADVANCED MIDWIFERY PRACTICE: AN EVOLUTIONARY CONCEPT ANALYSIS

Chapter based on:

Goemaes, R., Beeckman, D., Goossens, J., Shawe, J., Verhaeghe, S., & Van Hecke, A. (2016). Advanced midwifery practice : an evolutionary concept analysis. *Midwifery*, *42*, 29–37. Category Nursing: 14/116 (Q1) – IF: 1.948.

## ABSTRACT

**Aim:** the concept of 'advanced midwifery practice' is explored to a limited extent in the international literature. However, a clear conception of advanced midwifery practice is vital to advance the discipline and to achieve both internal and external legitimacy. This concept analysis aims to clarify advanced midwifery practice and identify its components.

**Methods:** a review of the literature was executed using Rodgers' evolutionary method of concept analysis to analyze the attributes, references, related terms, antecedents and consequences of advanced midwifery practice.

**Results:** an international consensus definition of advanced midwifery practice is currently lacking. Four major attributes of advanced midwife practitioners (AMPs) are identified: autonomy in practice, leadership, expertise, and research skills. A consensus was found on the need of preparation at master's level for AMPs. Such midwives have a broad and internationally varied scope of practice, fulfilling different roles such as clinicians, clinical and professional leaders, educators, consultants, managers, change agents, researchers, and auditors. Evidence illustrating the important part AMPs play on a clinical and strategic level is mounting.

**Key conclusions:** the findings of this concept analysis support a wide variety in the emergence, titles, roles, and scope of practice of AMPs. Research on clinical and strategic outcomes of care provided by AMPs supports further implementation of these roles. As the indistinctness of AMPs' titles and roles is one of the barriers for implementation, a clear conceptualization of advanced midwifery practice seems essential for successful implementation.

**Implications for practice:** an international debate and consensus on the defining elements of advanced midwifery practice could enhance the further development of midwifery as a profession and is a pre-requisite for its successful implementation. Due to rising numbers of AMPs, extension of practice and elevated quality requirements in healthcare, more outcomes research exclusively evaluating the contribution of AMPs to healthcare becomes possible and desirable.

## 1. Introduction

Advanced practice is a term used in several healthcare disciplines to distinguish a practice level from basic practice through specialization and expansion of knowledge, skills, and role autonomy (Bryant-Lukosius et al.; 2004, Broome, 2015; Steer et al., 2015). Although the term 'Advanced Practice Nursing' (APN) first appeared in the nursing literature in the 1980s, there still remains confusion about its definition (Ruel and Motyka, 2009). Several concept analyses (CA) have tried to clarify the concept of APN (Dowling et al., 2013). APN is frequently defined as 'a level of nursing practice that utilizes extended and expanded skills, experience and knowledge in assessment, diagnosis, planning, implementation and evaluation of the care required' (Australian Nursing and Midwifery Council, 2009). Four major roles are defined by the American Association of Colleges of Nursing as 'advanced nursing roles': nurse practitioners (NP), clinical nurse specialists (CNS), certified nurse midwives (CNM), and certified registered nurse anesthetists (CRNA) (Ruel and Motyka, 2009).

Compared to APN, advanced midwifery practice is explored to a lesser extent. With the exception of CNMs, advanced midwifery practice is a more recent development in midwifery. New or expanded roles of midwives are seen as essential for the contribution to high quality healthcare and for the development of the profession (Begley et al., 2007). However, advanced midwifery practice seems to be a controversial notion in midwifery and the necessity and desirability of advanced midwife practitioners (AMPs) have been questioned. Arguments used in this discussion are: creating advanced levels of practice could generate a midwifery 'elite' (Lewis, 2000; Lessing-Turner, 2001); all qualified midwives function at an advanced level of practice if they practice autonomously and to the full scope of their practice (Smith et al., 2010). When advanced midwifery practice is developed further, a clear conception is vital to advance the discipline (Ruel and Motyka, 2009). Concepts are an essential structural component of theory development. They make an important contribution to the expansion and development of midwifery knowledge through the enhancement of the theoretical foundation of research and practice (Larkin et al., 2009). Clear concepts are also important to avoid discordance within the midwifery profession (Ruel and Motyka, 2009) and for the achievement of external legitimacy (Hanson and Hamric, 2003). Similar to the concept of APN, advanced midwifery practice needs to be clearly defined to gain understanding and further acceptance of AMPs by society and other healthcare professions (Silva and Sorrell, 1992). Clarification of the advanced midwifery practice concept can prevent misguided interpretations regarding the purpose of AMPs and facilitate the implementation of advanced midwifery practice (Bryant-Lukosius et al., 2004).

As a clear definition and meaning of the concept is lacking on an international level, this CA aims to clarify what is currently known as advanced midwifery practice. The analysis identifies the components of advanced midwifery practice and serves as a base for further development.

## 2. Methods

For this CA a review of the literature was executed and Rodgers evolutionary method of concept analysis was used. This method was chosen because of the emphasis on the fact that a concept is context dependent and dynamic. In the evolutionary view, the content of a concept is not composed of a fixed set of conditions constituting an everlasting 'truth' of the concept. On the contrary, a concept is considered as a basis for further development as it evolves over time by convention or purposeful redefinition. This CA method was also chosen for its focus on the collection and analysis of raw data rather than the construction of 'cases' as is proposed in other CA approaches (Rodgers, 1989).

### 2.1. Search strategy

A search strategy was drafted by one reviewer with training in midwifery and systematic literature review methodology [RG]. After discussion with a second reviewer with expertise in systematic reviews and APN [AVH], a final search strategy for all databases was agreed upon by both reviewers. The literature search was performed by one author [RG]. The key search concepts were 'advanced practice', 'advanced practitioner titles' and 'midwifery'. Related terms, synonyms and abbreviations of these key search concepts were used in the search strategy and combined with one of the Boolean operators 'OR' and 'AND'. A detailed search strategy used for searching publications in Pubmed is displayed in Table 1. Publications were searched in the following databases: Pubmed, Web of Science, CINAHL, EMBASE, the Cochrane Library, and Invert. The Pubmed search strategy was modified accordingly to search the other databases. The databases were searched up until March 2015. No time limit for publications was used.

Hand searching of the reference lists of obtained articles to identify publications not indexed in electronic databases was not performed. However, grey literature was searched by screening the websites of the partners of the European Network for Midwifery Regulators (NEMIR) in April 2015. The websites of the partners were searched for documents related to advanced midwifery practice. In addition, all midwifery associations that were a member of the European Midwives Association in April 2015 (n = 34) were asked by e-mail whether they had policy documents regarding aspects of advanced midwifery practice (e.g. definitions, criteria, education, legislation). Also midwifery associations of the United States, Canada, Australia and New Zealand that were members of the International Confederation of Midwives (ICM) in April 2015 (n = 6) were e-mailed. A reminder was sent to the midwifery associations that did not reply to the first e-mail.

Table 1. Search strategy with MeSH terms and free Text words for PUBMED*

| | | | | | |
|---|---|---|---|---|---|
| | | **AND** | | **AND** | |
| Text words | Advanced<br>Extended role<br>Extended practice<br>Advanced practitioner<br>Advanced practice<br>Higher level practitioner<br>Specialist practitioner<br>Specialist practitioners<br>Specialty practice<br>Modern matron<br>Expanded<br>Extended<br>Expert — **OR** | Text words | Practice | MeSH term | Midwifery<br>Nurse midwives |
| | | | | Text words | Midwifery<br>Nurse midwives<br>Nurse midwife<br>Nurse-midwife<br>Nurse-midwives<br>Midwife<br>Midwives — **OR** |
| | **OR** | | **OR** | | **AND** |
| Text words | Advanced practice midwifery<br>Advanced midwifery practice<br>Advancing midwifery practice — **OR** | Text words | Advanced practice midwife<br>Advanced practice midwives<br>Clinical midwife specialist<br>Clinical midwife specialists<br>Advanced midwife practitioner<br>Advanced midwife practitioners<br>Advanced midwifery practitioner<br>Advanced midwifery practitioners<br>Advanced midwife<br>Advanced midwives<br>Advanced midwifery<br>Midwife consultant<br>Midwife consultants<br>Specialist midwife<br>Specialist midwives<br>Doctor of nursing practice — **OR** | Text words | AMP<br>APM<br>DNP<br>CNM — **OR** |
| | | | **OR** | | |
| | | Text words | Midwifery led<br>Midwifery-led<br>Midwife-led — **OR** | | |

*To use this search strategy in the databases of Web of Science, CINAHL, EMBASE, the Cochrane Library and Invert, it has been modified accordingly.

## 2.2. Inclusion and exclusion criteria

All types of publications were included (e.g. research papers, position statements, opinion papers, editorials). Only publications in English, French and Dutch were retained. During the title/abstract screening process, all sources containing one of the synonyms of advanced midwifery practice itself or one of the roles or titles of AMPs were retained. All sources with titles or abstracts containing the terms 'higher level practitioner', 'doctor of nursing practice', and 'advanced nursing practice' were retained if they were related to one or more of the following domains of midwifery practice: fertility care, obstetric care, gynaecological care, and neonatal care.

During the full text screening, only publications containing one or more of the following components of Rodgers' evolutionary model of CA as shown in Fig. 1 were retained: attributes, roles, related terms, antecedents or consequences. Publications that described elements of APN as well as advanced midwifery practice were retained, even if sub-analysis of advanced midwifery practice was not specifically described.

References were excluded if no abstract was available. Publications on the topic of APN without reference to midwifery were also excluded. References referring to midwife(ry)-led care were excluded unless they contained one of the components of Rodgers' evolutionary model of CA as shown in Fig. 1.

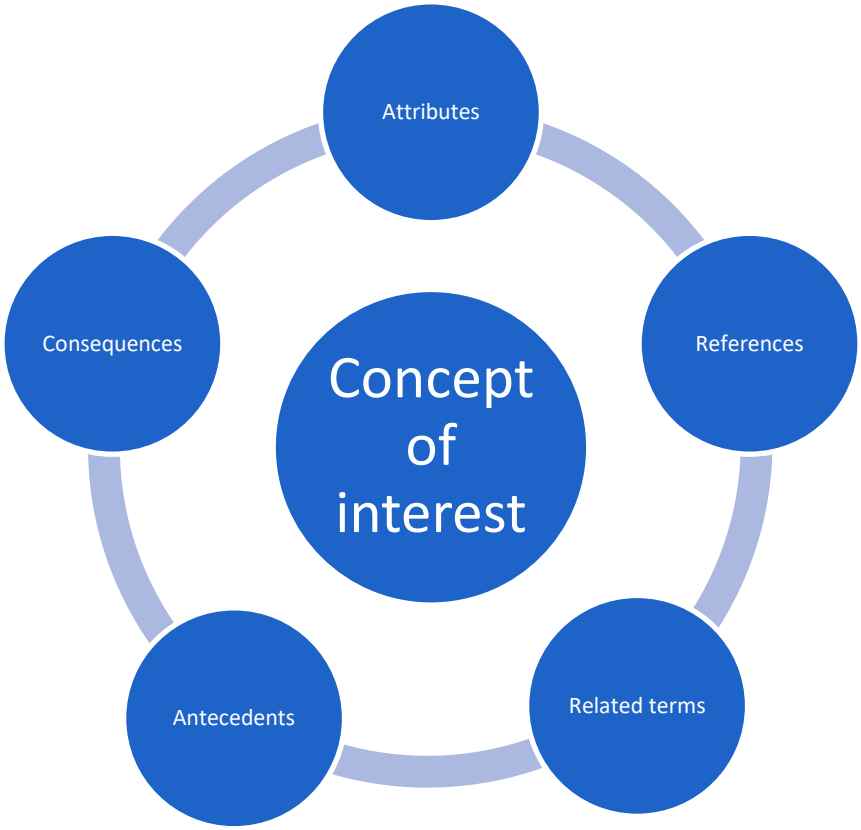


Figure 1. Essential components of data identification in the evolutionary method of concept analysis of B. Rodgers

### 2.3. Screening process

Two reviewers [RG and JG] independently screened a random selection of titles and abstracts that represented 10% of the total number of retrieved references. A first screening was done based on title. In case of doubt, the screening was based on the abstract. In case of disagreement between the two reviewers, a third independent reviewer [AVH] decided on inclusion or exclusion. As the interrater agreement between the two independent reviewers was 95.3%, one reviewer [RG] screened the remaining references. The same reviewer [RG] executed screening of the full texts.

### 2.4. Data extraction and analysis

All retained publications were read a second time by one reviewer [RG] prior to data extraction, which allowed the reviewer to become acquainted with the data and to label data based on the major components of Rodgers' evolutionary method as shown in Fig. 1. Thereafter, data extraction was facilitated by the use of a self-developed data extraction sheet that contained the author(s), publication year, type of publication and the country of relevance. The data extraction sheet also consisted of the major components of Rodgers' method of concept analysis. All sections of full text articles containing relevant information were copied into the applicable categories of the data extraction sheet. Consequently, thematic analysis was performed. Central themes were identified separately for each data category covering a major component of the CA. In the data category describing antecedents of advanced midwifery practice, extracted data were grouped per country to describe advanced midwifery practice from a historical perspective followed by a comparison of countries in the same continent.

## 3. Results

The search of the databases initially generated 13,430 records. After duplicate removal 10,528 records were screened for title and abstract, of which 1,050 were screened by two reviewers independently. Eligibility for full text inclusion was assessed for 334 articles, of which 104 were excluded because of lack of relevance with respect to advanced practice. Another 27 publications were excluded due to their focus solely on APN and 26 articles did not contain any information on attributes, roles, antecedents or consequences of advanced midwifery practice. Furthermore, 54 publications describing midwife-led care without mentioning another component of Rodgers' evolutionary method were excluded. Finally, no full text could be retrieved of 29 articles. In total, 94 publications were included in this review. Results of the screening and selection of publications are shown in Fig. 2.

The search of the websites of the NEMIR members yielded two documents. The response rate of the midwifery associations was 42.5%. One midwifery association indicated that documents related to advanced midwifery practice existed within the organisation but were not publicly available. One midwifery association sent a document eligible for the concept analysis.

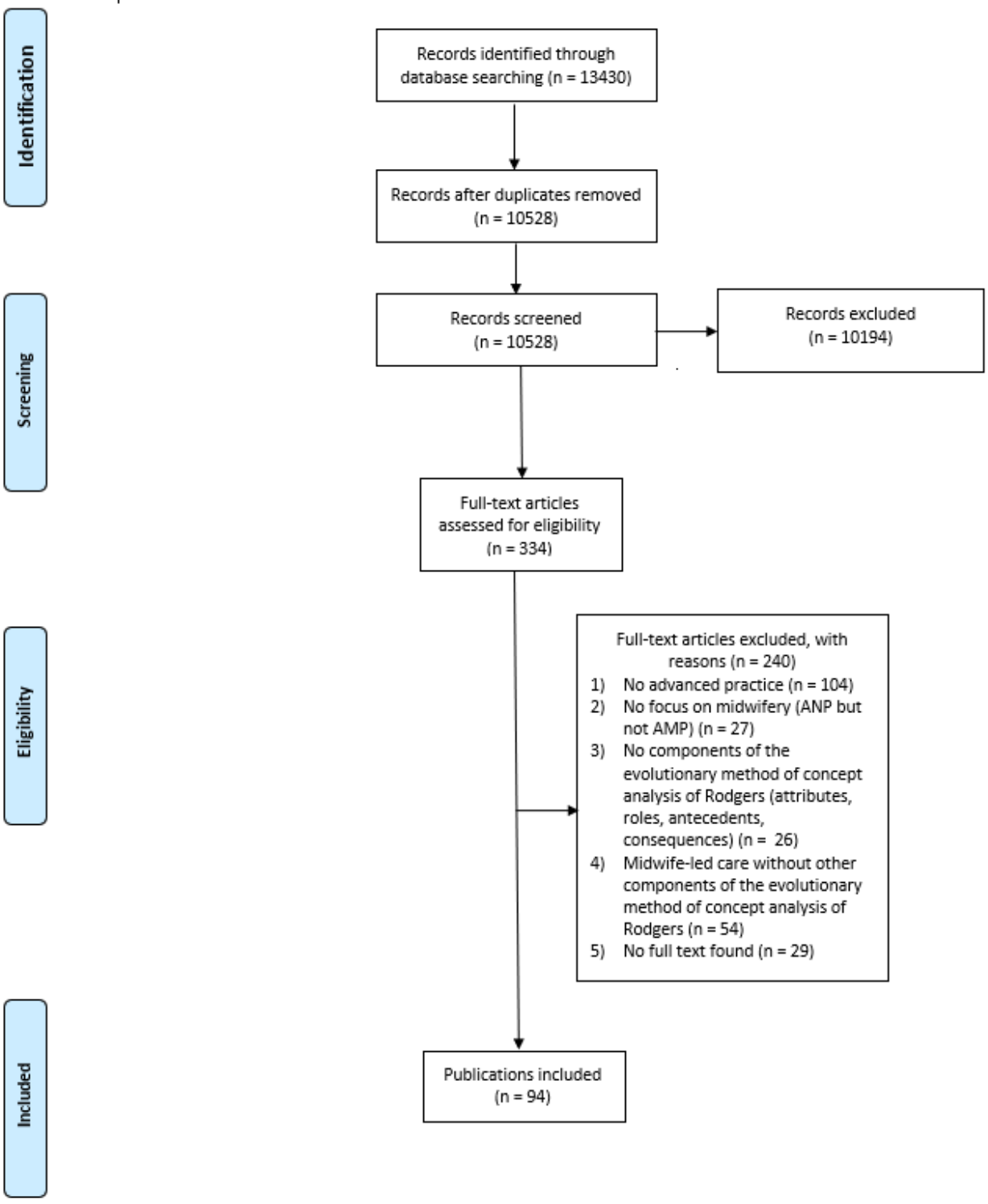


Figure 2. Flow Diagram of included publications

### 3.1. Attributes of advanced midwifery practice

*Definition*

One definition of AMPs was found. In Ireland, the National Council for the Professional Development of Nursing and Midwifery (NCNM) defines AMPs as midwives who "promote wellness, offer healthcare interventions and advocate healthy lifestyle choices for patients/clients, their families and carers in a wide variety of settings in collaboration with other healthcare professionals, according to agreed scope of practice guidelines. They utilize advanced midwifery knowledge and critical thinking skills to independently provide optimum patient/client care through caseload management of acute and/or chronic illness" (National Council for the Professional Development of Nursing and Midwifery, 2008).

Besides a definition of AMPs, four major attributes were detected in the literature: autonomous practice, leadership, expertise and research skills.

*Autonomous practice*

It is seen as essential for AMPs to practice independently and autonomously (Elliott et al., 2013), which means that AMPs are responsible and accountable for their own practice (MacLellan, 2007; Queensland Nurses Union, 2012). AMPs are able to independently provide care for women and their families (Glover, 1999). Decision making needs to be independent and focus on 'midwifery management' as opposed to 'obstetric management', in which priorities and views of another professional group might be expressed (Sookhoo and Butler, 1999).

*Leadership*

Literature shows that AMPs should act as both clinical and professional leaders (Higgins et al., 2014). An Irish case study reported on clinical and professional leadership activities of both advanced nurse and midwife practitioners (Elliott et al., 2013).

Clinical leadership was defined as 'activities supporting the development of practice in the service' (Elliott et al., 2013) and includes guiding and coordinating the activities of the multidisciplinary team, acting as an initiator of change in client care, take responsibility for policy, guideline development and implementation (Elliott et al., 2013). Furthermore, AMPs should change clinical practice through formal education of the multi-disciplinary team (Elliott et al., 2013). They should act as clinical preceptors who encourage a favorable learning environment for colleagues, midwifery and medical students. AMPs should stimulate in-service training and refresher courses (Queensland Nurses Union, 2012). Acting as a positive role model of autonomous clinical decision-making and ongoing professional development is also regarded as a clinical leadership activity of AMPs (Elliott et al., 2013).

Professional leadership was defined as "activities supporting development outside of the service at national and international level" (Elliott et al., 2013). Glover (1999) advocates for AMPs to be involved in curriculum development and ongoing evaluation as a measure to ensure that theory and practice are consistent and aligned. Furthermore, results from the Irish case study show that professional leadership includes activities such as teaching outside of the service, developing policy and engaging in professional organisations and committees at a (inter)national level (Elliott et al., 2013). According to Sookhoo and Butler (1999), awareness of political and strategic factors affecting care is a prerequisite for all AMPs. In summary, AMPs should be an active member of the midwifery profession (Queensland Nurses Union, 2012).

*Expertise*

Several literature sources support the view of expertise being a vital attribute of AMPs. Some authors refer to advanced midwifery practice as being carried out by competent and highly experienced practitioners (MacLellan, 2007). Others emphasize the importance of practice experience combined with breadth and depth of general midwifery knowledge (Queensland Nurses Union, 2012). It is considered important that advanced midwifery practice incorporates all aspects of midwifery practice instead of being confined to one practice area such as a labour ward (Sookhoo and Butler, 1999).

There also seems to be consensus on the necessity of combining clinical expertise and substantial relevant theoretical knowledge (Sookhoo and Butler, 1999). AMPs should be able to integrate theory in practice. Although technology skills are mentioned as an element of advanced practice, different authors point out the importance of balancing technology skills with 'caring' skills (Glover, 1999). According to Smith et al. (2010), advancement has as much to do with development of higher level thinking and critical evaluation of practice as with working to the full scope of midwifery practice. Recognition of the level of expertise of AMPs by medical and midwifery peers is also considered of great importance (Glover, 1999).

*Research skills*

Research skills are seen as a part of advanced practitioner roles (Elliott et al., 2013). Several ways of using research skills by AMPs are described; from doing research themselves over doing research with others to being involved in research projects, utilizing research and being knowledgeable of research. Literature agreed that the purpose of the AMPs' research skills should be to advance the practice of midwifery and provide evidence-based, holistic care, and to pass on knowledge and reflection (Glover, 1999). Sookhoo and Butler (1999) expressed concerns that AMPs might become too academic and forget the clinical aspects of midwifery.

## 3.2. References of advanced midwifery practice

*Titles*

Several titles regarding AMPs are found in the literature. The title 'AMPs' is most used in Irish publications. The terms 'advanced practice midwife' and 'midwife practitioner' were only noted in Australian publications (Fahy, 2010; Smith et al., 2010). In the UK, these kind of roles are referred to as 'consultant midwife' roles (Humphreys et al., 2007). In South Africa, the term 'advanced midwife' is used (Lesia and Roets, 2013).

*Roles*

The roles that AMPs play in healthcare are those of clinicians, clinical and professional leaders, educators, consultants, managers, change agents, researchers, and auditors (Clements and Parrinello, 1998; Lesia and Roets, 2013; Elliott et al., 2014; Walker et al., 2014). With the expansion of midwifery roles, the aim is to have a broader and more holistic interpretation of midwifery practice rather than adding separate tasks that usually are done by other health professionals and could lead to role fragmentation (MacLellan, 2007).

AMPs act as educators for midwives and other health professionals. CNMs who remain in academic centres also serve as faculty for family practice and obstetric residents (Brucker and Reedy, 2000). As managers, they contribute to service planning and budgetary processes (Begley et al., 2015). They act as auditors when they initiate and participate in audit of their own practice. As AMPs are required to carry out research that contributes to the improvement of client care, they take on the role of researchers. AMPs should disseminate research and audit findings and strive for evidence based practice. To reach this goal, they act as change agents. Professional leadership is shown through policy development and the contribution to the professional body of midwifery knowledge both nationally and internationally (Begley et al., 2015).

As clinicians, AMPs have a broad and internationally varied scope of practice within obstetrics and 'well women' gynaecology (Ray and Hardin, 1995). Due to surveys showing that CNMs manage aspects of care for all women, including underserved women with risk factors such as adolescents, women of very low income and women at risk for experiencing preterm labor, the phrase in ACNM documents referring to the provision of care for 'essentially normal' women was omitted (Brucker and Reedy, 2000). CNMs have also incorporated new skills, such as performing ultrasound examinations, endometrial biopsies, vacuum extraction, and other highly technological procedures (Brucker and Reedy, 2000). Other advanced skills mentioned in the literature are epidural monitoring, application of scalp electrodes and suturing third degree tears (Smith et al., 2010). In several countries, AMPs have prescriptive authority (Boyd, 2000; Begley, 2008; Walker et al., 2014).

### 3.3. Related terms of advanced midwifery practice

Several terms are related to advanced midwifery practice. As midwife led or midwifery led care entails autonomous midwifery practice, it is related to advanced midwifery practice. 'Clinical Midwife Specialist' (CMS) or 'specialist midwife' are also related terms. Although specialization in itself is not enough to be considered as an advanced nurse or midwife practitioner, it is related to advanced midwifery practice as specialists are seen as experts in the area they have specialized in. In Ireland, a clear distinction between specialist and advanced practice is made. In contrast with AMPs who are expected to conduct research themselves, CMSs are more expected to use research findings for evidence based practice rather than to conduct research. Both AMPs and CMSs are required to provide clinical leadership, but AMPs are also required to provide professional leadership. While CMSs are expected to initiate and participate in audit, AMPs are expected to lead, conduct and disseminate audit (Begley et al., 2015).

As CNMs are seen as one of the specialties in APN in the US and as some but not all of the CNMs have incorporated advanced skills as mentioned above, they are related to advanced midwifery practice.

In some countries, ANPs are working in domains that are practice domains for midwives in other countries. As those ANPs have the same skills required for advanced practice as AMPs, some terms referring to ANPs are related to advanced midwifery practice. Such terms are advanced neonatal nurse practitioner and advanced obstetric nurse practitioner.

### 3.4. Antecedents of advanced midwifery practice

*North America*

Specialized and advanced practice roles have existed in the US for more than 40 years (Begley et al., 2013). The introduction of CNMs in the US in 1925 triggered the establishment of the first recognized training programme for midwives in the US in 1931 (Anderson and Gilliss, 1998). The number of training programmes has increased to 39 in 2012 while the number of CNMs has risen to 13 607 in 2014 (Walker et al., 2014).

In the 1990s, some authors questioned the designation of CNMs as advanced practitioners. Training in both disciplines of nursing and midwifery was seen as insufficient to denominate CNMs as advanced practitioners (Burkhardt, 1996; Brucker and Reedy, 2000). CNMs are frequently defined as registered nurses educated in the two disciplines of nursing and midwifery who attend graduate education programmes (Luck and Tornoe, 1996; Walker et al., 2014). The American College of Nurse Midwives (ACNM) supports this requirement for education at master's level (Walker et al., 2014).

In the past decade the American Association of Colleges of Nursing has called for the requirement of the Doctor of Nursing Practice (DNP) as a minimum entry level for APNs into practice. As CNMs are included in the definition of APNs, the question was raised whether the DNP entry level requirement should apply to midwives as well (Avery and Howe, 2007). On the one

hand, ACNM supports the completion of a doctoral programme for those midwives who wish to continue with their education (Avery, 2010). On the other hand, ACNM does not recognize a doctoral degree as an absolute requirement for the entrance of CNMs into practice (Walker et al., 2014).

In Canada, there is no clear consensus on what might constitute advanced midwifery practice. Midwifery in Canada is not regulated on a national level but in the provinces and territories. Both competencies for midwives entering the profession and 'advanced level' competencies have been developed. As practice between Canadian provinces and territories differs, what is seen as 'advanced' competencies in one province might be considered 'entry level' competencies in another province and vice versa (Smith et al., 2010).

*Europe*

The introduction of AMPs is more recent in Europe than in the US, with important developments in advanced midwifery practice since 1990s in Ireland and the UK. In Ireland, the implementation of advanced midwife practitioner (AMP) roles as a clinical career path for midwives was accelerated by a government report in 1998 (MacLellan, 2007). The report comprises recommendations on the introduction of grades for CMSs and AMPs. The main goal of the implementation of a clinical career pathway for midwives was to encourage experienced midwives to remain in clinical practice. The NCNM was established to create a clear framework for the accreditation of midwives in specialist and advanced practitioner roles (MacLellan, 2007). Formal recognition of AMPs is given by the Nursing and Midwifery Board of Ireland (NMBI). Applicants should be registered midwives with at least a master's degree in an area that is relevant to the specialist field of practice. The midwife should also have a minimum of 7 years post registration experience, including 5 years in the chosen area of specialist practice (Begley et al., 2015).

In contrast to Ireland, the development of advanced midwifery practice was deemed unnecessary in the UK as both the Royal College of Midwives and the UKCC Statutory Midwifery Committee stated that there was little justification for 'higher level practice' for midwives (Smith et al., 2010). The comparison of competencies for higher level practice in nursing with competencies of initial midwifery registration supported the belief that midwives practice at a specialist or advanced level of practice upon registration into the profession (Smith et al., 2010). Instead, consultant midwife (CM) roles were introduced. Similar to Ireland, the implementation of CM roles in the UK was seen as a measure to strengthen recruitment and retention of experienced midwives by providing an opportunity for midwives to develop clinical expertise, professional leadership and consultancy, education and research within a specific area of practice (Humphreys et al., 2007). Besides midwife recruitment and retention issues, several other events contributed to the introduction of this new role, such as new general practitioner and medical consultant contracts and the increasing expectations of health service users. Literature suggests that the new European Commission Working Time Directive with special rules limiting working hours

for junior doctors was an important driver for the creation of new midwifery roles (Booth et al., 2006). Some authors argue that there is no support for this suggestion (Humphreys et al., 2007). The introduction of a senior level clinical role served the following purposes: modernization in healthcare, reduction of inequalities in healthcare (e.g. waiting lists), improvement of patient outcomes and strengthening of primary care. When CM roles were introduced, the UKCC saw these roles on a master degree level (Sookhoo and Butler, 1999).

*Australia, New Zealand and South Africa*

Smith et al. (2010) state that advanced midwifery practice is not discussed in New Zealand as midwives are recognized as autonomous practitioners which are competent to provide complete maternity care. In contrast to New Zealand, advanced midwifery practice is a controversial notion in midwifery in Australia (Smith et al., 2010). The Australian College of Midwives (ACM) has stated that a midwife who works within the full scope of midwifery practice is not working at an advanced or specialized level but is simply fulfilling the defined role of a midwife (Smith et al., 2010). Recently, a position statement of the Nursing and Midwifery Board of Australia (NMBA) notified that there is no registration standard for 'midwife practitioners'. Midwives that had obtained an endorsement as midwife practitioner by July 2010 can continue with the endorsement if they meet the NMBA requirements for nurse practitioners as applied to a midwifery context (Nursing and Midwifery Board of Australia, 2015).

An advanced midwifery programme at graduate level was installed in the Free State of South Africa in the late 1990s. The aim of the programme was to enhance the quality of midwifery services by educating skilled attendants to deliver midwifery care. The implementation of AMP roles was seen as an appropriate measure to decrease maternal and neonatal mortality and morbidity and to help South Africa reach Millennium Development Goals 4 and 5 (Lesia and Roets, 2013).

### 3.5. Consequences of advanced midwifery practice

Both the number of AMPs and the amount of evidence illustrating the important part AMPs play in healthcare settings is growing. Research has shown that the number of CNM attended births is rising and the number of perinatal complications in CNM attended births is not higher than in physician attended births for comparable populations (American College of Nurse Midwives, 2012; Walker et al., 2014). CNM care results in lower costs due to fewer unnecessary, invasive and expensive interventions and is associated with lower rates of caesarean birth, labour induction and augmentation, less use of regional anesthesia, significant reduction in the incidence of third and fourth degree perineal tears and higher rates of breastfeeding (Spatz, 1996; Gabay and Wolfe, 1997; Kendrick, 1997; Newhouse et al., 2011; Dole and Nypaver, 2012; Walker et al., 2014).

In relation to gynaecological care, an evaluation of 11,487 aspiration abortions showed that care provided by non-physician care providers who received specific training in the provision of aspiration abortion, among which CNMs, was not inferior to that provided by experienced physicians. Considering the sparsity of abortion services in some areas of the US, these findings support the adoption of policies that increase access to abortion by expanding the number and type of healthcare professionals who can perform early aspiration abortions, e.g. non-physician providers such as CNMs (Weitz et al., 2013). Furthermore, data from an Irish qualitative descriptive study suggest that AMPs contribute to a higher quality of client care on a strategic level. AMPs were described as leaders in guideline, audit and policy development, and in education of staff. They were also believed to launch new initiatives in care, improve continuity and a more holistic approach of care compared with the care given by doctors (Begley et al., 2014).

## 4. Discussion

In this paper the concept of advanced midwifery practice was reviewed. Several attributes, titles, roles and related terms have been found. Very little was found in the literature on the definition of advanced midwifery practice. Besides several definitions on APN that could be considered relevant to CNMs, only one definition of AMPs could be found. It is unclear to which extent this definition is recognized as a consensus definition on AMPs internationally. Hence, a formal consensus definition on advanced midwifery practice is currently lacking. A possible explanation may be the differences in scope of practice and in the emergence of AMPs worldwide. As a scope of practice is determined by the national legal and policy context regarding midwifery, it might be advisable to focus on similarities in 'advancement' skills rather than 'specialization' and 'extension' of practice when trying to define advanced midwifery practice on an international level. The lack of agreement on the necessity of another level of midwifery practice in several countries might also explain the lack of a consensus definition on advanced midwifery practice. The different labeling of practitioners with similar attributes and purposes in healthcare adds to this confusion. A clear definition and conceptualization of advanced midwifery practice is important for both internal cohesion in the midwifery profession and external understanding and acceptance of AMPs (Silva and Sorrell, 1992; Ruel and Motyka, 2009). Therefore, it would be recommendable to reach consensus on the attributes, skills, titles and roles of AMPs. The existing definition of AMPs by the Irish NCNM might be a good starting point for this discussion. Another good starting point could be the ICM Essential Competencies for Basic Midwifery Practice, a document by the International Confederation of Midwives comprising 268 items organised in basic and additional skills within 7 competency domains (Fullerton et al., 2011). Several of these additional skills or abilities, e.g. quality management, taking a leadership role in policy arenas or performing manual vacuum aspirations of the uterus in abortion-related care, are skills possessed by AMPs. 'Midwives who elect to engage in a broader scope of practice' are one of two target groups for whom the ICM has defined these additional skills. It might therefore be interesting to discuss the desirability of and

the extent to which the denomination of 'additional' skills could be replaced by 'advanced' skills. The ICM document is up for revision in 2016. Given the organisation's international focus and its mission to advance midwifery globally, the opportunity of document revision might be seized to facilitate a global discussion on what is considered as advanced midwifery practice on an international level. In addition and based on the results of this review, the following definition of advanced midwifery practice is proposed: 'Advanced midwifery practice is characterized by a level of midwifery practice at which midwives use their expertise, management and clinical leadership skills to provide evidence-based, tailored care for women and their families independently and autonomously. Professional leadership and research skills are used to evaluate and improve practice, and to advance midwifery as a profession and science'.

The consequences of advanced midwifery practice reported in this CA support the desirability of implementation of AMPs in healthcare settings. Similar to APN being seen as a promising way to offer experienced nurses a career by the bedside (De Geest et al., 2008), advanced midwifery practice could provide midwives with the possibility of a clinical career where direct patient care is combined with academic and leadership skills. This could enhance the retaining of experienced midwives in the profession and the attractiveness of the profession for aspiring midwives. In addition, the increasing number of women with pregnancy complications or with chronic health conditions going through pregnancy and childbirth calls for midwives that can provide complex care (Centres for Disease Control and Prevention, 2015; Qin et al., 2016). However, contacts with midwife associations and screening of the websites of NEMIR members has revealed limited documentation on advanced midwifery practice. This ascertainment supports the suggestion that advanced midwifery practice is only implemented in a limited number of countries, thus revealing opportunities for the implementation of AMPs worldwide. As implementation of AMP posts is complex (Bryant-Lukosius et al., 2004; Furlong and Smith, 2005; De Geest et al., 2008), more research into the conditions for successful implementation is recommended.

This CA has uncovered several barriers for implementation, among which the indistinctness of AMPs' titles and roles leading to the undesirability of terms such as higher level practice and advanced midwifery practice. Therefore, clear conceptualization of advanced midwifery practice could be seen as a prerequisite for implementation. Another important driver for the successful implementation of AMP roles is the availability of education programmes to prepare AMPs for their new roles (De Geest et al., 2008). This CA found a consensus on the level of education for AMPs being at master's/graduate level. However, differences between programmes are likely as several programmes in nursing, midwifery or a related discipline are considered eligible for preparing midwives for AMP roles. Therefore, more research is desirable to uncover the degree in which programmes preparing midwives to function at advanced level show similarities. Finally, rising numbers of AMPs and extension of practice would call for more research on the outcomes of AMPs. Due to elevated quality requirements in healthcare, the evaluation of AMPs' practice is vital. As research skills are a major attribute of advanced midwifery practice, AMPs themselves can play a crucial role in the evaluation of their practice.

Some limitations of this CA should be addressed. The inclusion of publications in no other languages than English, French and Dutch could have led to an incomplete analysis of advanced midwifery practice. With the exception of obstetrical care, publications reporting on consequences of AMP care often also included APNs, CMSs, non-physician providers and no separate analysis was reported. Therefore, the estimation of the effect of AMPs on clinical and strategic outcomes should be interpreted with caution. No quality assessment of included studies was performed. Therefore, caution regarding the results of the outcomes section in this CA must be applied. However, the strength of this CA lies in the execution of a comprehensive literature review instead of analyzing a sample containing minimum 20% of the total number of documents as is recommended by Rodgers (1989). As this CA is the first analysis specifically focusing on advanced midwifery practice, it gives an overview and state of the art of the components identifying the concept.

## 5. Conclusion

This concept analysis was undertaken to clarify the concept of advanced midwifery practice. Although the review uncovered one definition and several attributes of AMPs such as autonomous practice, leadership, expertise and research skills, an international consensus definition regarding advanced midwifery practice is lacking. If the debate on advanced midwifery practice is to be moved further, a better understanding of the thorny issues in reaching consensus on advanced midwifery practice is necessary. Furthermore, the current findings in this review support the positive impact AMPs have on clinical and strategic outcomes. Future research should therefore concentrate on the investigation of requirements for successful implementation and increase in AMP roles internationally. With growing number of AMPs, it becomes possible and essential to undertake more outcomes research exclusively evaluating the contribution of AMPs to healthcare.

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# CHAPTER 3

# FACTORS INFLUENCING THE IMPLEMENTATION OF ADVANCED MIDWIFE PRACTIONERS: EXPERIENCES AND OPINIONS OF STAKEHOLDERS

Chapter based on:

Goemaes, R., Shawe, J., Beeckman, D., Decoene, E., Verhaeghe, S., & Van Hecke, A. (2018). Factors influencing the implementation of advanced midwife practitioners in healthcare settings : a qualitative study. *Midwifery, 66*, 88–96.

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## ABSTRACT

**Objective:** To explore factors influencing the implementation of advanced midwife practitioner roles.

**Design:** Semi-structured individual face-to-face and focus group interviews were conducted. Data analysis was performed using the Framework Method.

**Setting and participants:** A purposive sample (n = 32) included chief nursing officers, middle managers, head midwives/nurses, primary care team leaders, midwives with and without advanced midwife practitioner roles, heads of midwifery educations, and obstetricians.

**Findings:** Budgetary constraints on a governmental and healthcare organisational level were mentioned as main barriers for role implementation. The current fee-for-service financing model of healthcare professionals was also seen as an impediment. Obstetricians considered the implementation of advanced midwife practitioner roles as a possible financial and professional threat. Documenting the added value of advanced midwife practitioner roles was regarded a prerequisite for gaining support to implement such roles. Healthcare managers' and midwives' attitudes towards these roles were considered essential. Participants warned against automatically transferring the concept of advanced practice nursing to midwifery. Although participants seldom discussed population healthcare needs as a driver for implementation, healthcare organisations' heightened focus on quality improvement and client safety was seen as an opportunity for implementation. University hospitals were perceived as pioneers regarding advanced midwife practitioner roles.

**Key conclusions and implications for practice:** Multiple factors influencing role implementation on a governmental, healthcare organisational, and workforce level illustrate the complexity of the implementation process, and highlight the need for a well-thought-out implementation plan involving all relevant stakeholders. Pilot projects for the implementation of advanced midwife practitioners in university hospitals might be useful.

## 1. Introduction

In several healthcare disciplines, advanced practice is distinguished from basic practice through specialization and expansion of knowledge, skills, and role autonomy (Bryant-Lukosius et al., 2004; Steer et al., 2015). In midwifery, advanced practice is described as "a level of midwifery practice at which midwives use their expertise, management and clinical leadership skills to provide evidence-based, tailored care for women and their families independently and autonomously. Professional leadership and research skills are used to evaluate practice and advance midwifery as a profession and science" (Goemaes et al., 2016). Several titles are used internationally for referring to midwives with minimum a master's degree taking on the following roles besides the role of expert clinical practitioner: clinical and professional leader, educator, researcher, policy advisor, innovator, consultant or facilitator of ethical decision making (Lesia and Roets, 2013; Elliott et al., 2014; Walker et al., 2014). Such titles are (advanced) midwife practitioners, advanced (practice) midwives, and consultant midwives. In this paper, all midwives practicing on an advanced level as described above will be referred to as advanced midwife practitioners (AMPs).

Advanced midwife practitioners are seen as new roles in healthcare and considered essential for high quality healthcare and the development of the profession (Begley et al., 2007). Several studies reporting on clinical outcomes support the desirability of implementation of advanced practitioners in healthcare settings (Begley et al., 2010; Newhouse et al., 2011; American College of Nurse Midwives, 2012; Weitz et al., 2013; Patil et al., 2016; Casey et al., 2017a). Despite limited evidence that supports the contribution to professional (e.g. education of staff) and organisational outcomes (e.g. quality of care, cost and access to services) that can be attributed uniquely to advanced practitioners (Begley et al., 2014; Casey et al., 2017a), Casey et al. (2017b) concluded that the potential positive impact of such roles cannot be doubted (Casey et al., 2017b). In addition, midwives are increasingly confronted with complex care situations as the number of women with pregnancy complications and high risk pregnancies due to pre-existing health conditions are growing (Centres for Disease Control and Prevention, 2015; Qin et al., 2016). Furthermore, advanced midwifery practice could provide midwives with the possibility of a clinical career 'at the bedside', in which direct client care is combined with academic and leadership skills. This could prevent midwives educated at master's level from having to choose between client care and building a career in management, research or educational positions (De Geest et al., 2008).

A limited number of countries have implemented AMP roles (e.g. Ireland, the United Kingdom), despite the elements supporting the desirability of such roles (Department of Health and Social Care, 1999; Begley et al., 2007; National Council for the Professional Development of Nursing and Midwifery, 2008; Robinson, 2012). Furthermore, there is little international literature that discusses implementation processes of AMP roles. Data on the feasibility, barriers and

facilitators for the implementation of AMP roles are lacking internationally. These data are also lacking for Belgian healthcare settings, notwithstanding elements that support a discussion on the implementation of AMP roles. Firstly, the extension of legal competencies of Belgian midwives since 2006 (e.g. prescription authority) has intensified a discussion on the duration and level of midwifery education in Belgium (Federal Council for Midwives, 2016). This education consists of a three-year direct-entry midwifery programme equivalent to 180 ECTS and leads to a professional bachelor's degree in Flanders. In the Walloon region, the education consists of a four-year bachelor programme equivalent to 240 ECTS, in which students spend one year on nursing, one year on nursing and midwifery, and two years on midwifery (Emons and Luiten, 2001). Secondly, there is a lack of formally acknowledged discipline specific clinical positions in which master educated midwives can structurally contribute to care innovation, quality improvement and evidence-based practice.

Literature from related healthcare disciplines shows that implementation of advanced practitioner roles is complex. Several frameworks for the development, implementation and evaluation of advanced practice nursing roles have been developed (Bryant-Lukosius et al., 2004; Furlong and Smith, 2005; De Geest et al., 2008). These frameworks recommend the need for a new model of care involving advanced practitioner roles and the identification of role barriers and facilitators as two vital steps in the implementation process (Bryant-Lukosius et al., 2004; Furlong and Smith, 2005; De Geest et al., 2008). As the implementation of AMP roles is still in its infancy in Belgium, therefore, this study aimed to explore experiences and opinions of stakeholders regarding factors influencing the implementation of AMP roles in Flanders, the Dutch-speaking part of Belgium. This will enhance the limited knowledge on AMP role implementation internationally.

## 2. Methods

### 2.1. Design

A qualitative study was undertaken using the Framework Method (Gale et al., 2013). Both individual and focus group interviews were held.

### 2.2. Sample

Key stakeholders from Flanders were invited to participate. Participants were selected based on their expertise in (1) the domain of advanced and specialist midwifery practice, (2) healthcare management on an operational or strategic level, (3) midwifery education, (4) healthcare policy, or (5) a medical specialty related to midwifery care domains (e.g. obstetrics and gynaecology). Professionals from a variety of healthcare settings, professions, positions, and experience of working with midwives with an AMP profile were selected using purposive sampling. The characteristics of the participants are reported in Table 1.

Table 1. Participant characteristics of individual and focus group interviews.

| | Individual interviews | Focus group interviews |
|---|---|---|
| **Characteristic** | **Mean (Range)** | **Mean (Range)** |
| **Age (years)** | 55 (32-65) | 48 (30-56) |
| **Experience in position (years)** | 9.91 (2-35) | 20 (7-34) |
| **Characteristic** | **n** | **n** |
| **Gender** | | |
| Male | 5 | 1 |
| Female | 17 | 9 |
| **Level of education** | | |
| Bachelor degree | 5 | 7 |
| Master degree | 14 | 3 |
| PhD | 3 | 0 |
| **Position** | | |
| Midwife in primary/secondary care[a] | 0 | 5 |
| Midwife with AMP[c] profile[a] | 2 | 1 |
| Head midwife/head nurse/lead midwife of a primary care team[a] | 5 | 3 |
| Middle manager maternal and child health department[a] | 7 | 0 |
| Chief nursing officer[a] | 3 | 0 |
| Head of bachelor education in midwifery[a] | 2 | 1 |
| Obstetrician[b] | 3 | 0 |

[a] Fourteen participants in these categories had expertise regarding midwifery policy due to board membership of a midwifery association or council.

[b] As the term 'obstetrician' refers to medical specialists trained in both obstetrics and gynaecology in the Belgian healthcare context, the term obstetrician is used in this paper

[c] AMP: Advanced midwife practitioner

Participants working in a hospital setting were informed about the study and personally invited to partake by e-mail with permission of or via the chief nursing officers (CNOs). The latter were contacted directly by e-mail. Clinicians working outside of the hospital setting were informed about the study by e-mail and electronic newsletters via their professional associations after consent of the professional organisations' Board of Directors.

### 2.3. Data collection

Both individual and focus group interviews were conducted. As the implementation of advanced practice roles is seen as complex, within-method triangulation is regarded beneficial for collecting data on a complex theme (Wadsworth, 2000). A combined data collection strategy allows for the comparison of data collected in individual and focus group interviews, which enhances trustworthiness of the findings (Lambert and Loiselle, 2008). In addition, the dynamic interaction between participants during focus group interviews stimulates their thoughts as well as debate about the topic and contributes to generating rich data (Holloway and Galvin, 2017). Furthermore, the combined use of individual and focus group interviews facilitates a maximum range of perspectives that can be included within the boundaries of available resources, potentially contributing to a greater depth and breadth of data and "a more nuanced understanding" (Wadsworth, 2000; Lambert and Loiselle, 2008).

Individual semi-structured face-to-face interviews were conducted between January 2016 and February 2017. Twenty-two participants were interviewed at a date, time and location of their choice. Each individual interview lasted between 31 and 89 min (average duration 61.4 min). Two focus group interviews were conducted between July and August 2016. The focus groups consisted of three and seven participants, respectively. The focus groups took place at a date, time and location that was most convenient for a maximum number of participants. The focus groups lasted between 64 and 109 min (average duration 86.5 min).

Purposive sampling was used to broaden initial insights and to include participants with and without familiarity with AMP roles, and participants from both university and peripheral hospitals. The latter was done as university and peripheral hospitals provide different contexts for care provision. Besides providing the care of peripheral hospitals, the mission statement of university hospitals includes the provision of expert care in complex care situations, care innovation and development, clinical training for (medical) students and specialists, and research (Royal Decree of 7 June, 2004).
New participants were selected until data saturation was reached, which occurred after the analysis of 20 individual and two focus group interviews. Two additional individual interviews did not uncover any new findings.

## 2.4. Procedure

All interviews commenced by orally informing the participants about the aim of the study. The participants read the information letter and could ask questions before signing the informed consent form. All interviews were audio-taped.

Data were collected using open-ended questions. The interview guide comprised a number of key questions as shown in Table 2. Based on intermediate results, a question to elaborate on the desirable competencies of AMPs was added. A question inviting participants to talk about their opinions on the implementation of AMPs from a client population perspective was introduced as few participants mentioned this aspect spontaneously.

After the participants had given their description of AMPs, the interviewer provided a definition to ensure that participants interpreted AMP roles as intended in this study.

All individual and focus group interviews were conducted by the first author. Field notes were taken during and immediately after the interviews. Audio recordings were transcribed verbatim by experienced transcribers. Data identifying the participants or persons mentioned in the interviews were deleted. The first author checked each transcript with the recording for accuracy, allowing to immerse herself in the data.

Table 2. Interview guide

| | |
|---|---|
| 1. | How would you describe midwives working on an advanced practice level? |
| 2. | What is your opinion on the appropriateness regarding the implementation of AMP[§] roles in the healthcare setting you work in? |
| 3. | What is your opinion on the desirability regarding the implementation of AMP roles in Flemish healthcare settings? |
| 4. | What is your opinion on / have you experienced in relation to the feasibility regarding the implementation of AMP roles in the healthcare setting you work in? |
| 5. | Which barriers do you presume / have you experienced in implementing AMP roles in Flemish healthcare settings? |
| 6. | Which enablers / facilitators do you presume / have you experienced in implementing AMP roles in Flemish healthcare settings? |
| 7. | To what extent do you see opportunities for the implementation of AMP roles in the healthcare setting you work in? |

[§]AMP: Advanced midwife practitioner

## 2.5. Data analysis

The process of data collection and data analysis was executed iteratively. Interviews were analyzed using the Framework Method (Ritchie and Spencer, 1994; Smith and Firth, 2011; Gale et al., 2013). This method was chosen because (1) it provides a systematic approach to the analysis of interview transcripts, (2) it allows for the comparison of data by themes across cases as well as retaining a context perspective of individual data, (3) it is not aligned with a particular epistemological or philosophical approach, and (4) it allows for flexible use along the inductive-deductive continuum (Smith and Firth, 2011; Gale et al., 2013).

The process of data analysis was started by the first author (re)reading the transcripts of the first two interviews to familiarize herself with the data. Subsequently, the first author coded the interviews using NVIVO Pro 11 software (QSR International). The coded transcripts were then read by a co-author [AVH] and discussed with the first author. The same procedure was followed after the fifth interview. A third [SV] and fourth researcher [ED] independently read interviews during the data analysis process. The intermediate data analysis of the individual and focus group interviews was read and discussed by the research team including researchers with extensive experience in qualitative research, general and advanced practice nursing, and midwifery.

Initial codes were constructed inductively and thereafter sorted into inductively emerging subcategories and categories. After 15 individual and two focus group interviews, the inductively developed categories were compared with existing frameworks for the implementation of advanced practice roles (Bryant-Lukosius et al., 2004; Furlong and Smith; 2005; De Geest et al., 2008; Ryley and Middleton, 2016). As the inductively developed categories coincided with the drivers for guiding the introduction and development of advanced practice nursing roles in the framework by De Geest et al. (2008), the broad categories of this framework were used to guide the reporting structure of the results of this study: the legal, policy and economic context, practice patterns, healthcare needs of the population, workforce issues, and education (De Geest et al., 2008).

## 2.6. Rigour

Although the first author had limited experience with conducting qualitative research prior to this study, she was guided and coached by experienced qualitative researchers [AVH, SV, ED]. Several of the co-authors are also familiar with the field of advanced practice nursing and advanced midwifery practice internationally.

As the interviewer [RG] was known to several of the participants, they were aware of the interviewer's background as a midwife and her current profession. To avoid social desirability bias, i.e. participants responding with what they assume is

the interviewer's preferred response rather than their personal view (Krefting, 1991), the inductive nature of the data collection without preconceived thoughts on the interviewer's part was stressed to the participants knowing the interviewer. For similar reasons, the first author introduced herself as a researcher without mentioning her background as a midwife to participants that did not know her prior to the interview.

Several strategies were used to increase the trustworthiness of the data. After the first two interviews, the interview style was discussed with a co-author [AVH]. The comparison and discussion of coded data and intermediate results by members of the research team at regular intervals increased the trustworthiness of data analysis. Furthermore, an audit trail was used to document decisions that were made regarding sampling, data collection and data analysis. The COREQ checklist was used as a guideline in reporting this study (Tong et al., 2007).

## 3. Findings

Participants elaborated on the following categories: legal, policy and economic context, practice patterns, healthcare needs of the population, workforce issues, and education. An overview of the contents of these categories is shown in Table 3.

Table 3. Overview of factors influencing AMP role implementation

| , | LEGAL, POLICY AND ECONOMIC CONTEXT | PRACTICE PATTERNS | HEALTHCARE NEEDS OF THE POPULATION | WORKFORCE ISSUES | EDUCATION |
|---|---|---|---|---|---|
| BARRIERS | • Budgetary constraints on a governmental level<br>• Budgetary constraints on the level of healthcare organizations<br>• Outdated and insufficient midwifery staffing levels<br>• A need to demonstrate immediate and direct savings in client care by AMP[§] role implementation<br>• Fee-for-service healthcare financing model | • No automatic transfer of the concept of 'Advanced Practice Nursing' to midwifery | • Low perinatal morbidity and mortality<br>• Fear of jeopardizing a holistic approach to clients' care needs due to extensive specialization | • A lack of knowledgeability of AMP roles by obstetricians and other related healthcare disciplines | • Current midwifery education insufficient for practice beyond a basic level<br>• A lack of consensus regarding the educational preparation and level of education of AMPs<br>• A lack of consensus regarding the definition, necessity, and extent of research skills in clinical practice |
| FACILITATORS | • Structural governmental funding of AMP positions<br>• Legislation changes with extension of legal competences for midwives<br>• Signals from policymakers underlining the necessity of AMP roles (e.g. establishment of care innovation programmes)<br>• Heightened focus on the accreditation of healthcare organizations, quality improvement and patient safety | • Changes in the current healthcare model and delivery (e.g. shorter hospital stay in the postpartum period)<br>• University hospitals taking on the role of pioneers for AMP role implementation | | • A positive attitude of middle managers and head midwives towards AMPs<br>• Demand for AMP roles by midwives<br>• Support of obstetricians in clinical managerial positions | |

[§]AMP: Advanced midwife practitioner

### 3.1. Legal, policy and economic context

*Economic factors*

Budgetary constraints on a governmental level were mentioned by nearly all participants as one of the main barriers for the implementation of AMPs. All participants in a management position stressed the importance of structural governmental funding of AMP positions as a vital prerequisite for the implementation and long-lasting embedment of these roles. If the funding of AMP positions is left to the voluntary willingness of healthcare organisations, the possibility of cutting out these positions in economically challenging times increases (Table 4, Q1). Head midwives and middle managers also indicated that hospital boards used the available means primarily to maintain current staffing levels because of budgetary cuts. They felt that there are not enough financial means to create new roles in healthcare at this moment. Head midwives also pointed out that midwifery staffing levels are outdated and insufficient, which makes it difficult to exempt midwives with a master degree for direct client care activities. In a cost-effectiveness driven healthcare system, participants stressed the importance of being able to document the added value of AMP roles to hospital boards (Table 4, Q2). However, participants felt that it is challenging to demonstrate immediate and direct savings in client care by implementing AMPs as the direct improvements of AMP care are difficult to measure.

Furthermore, the current financing of healthcare professionals such as obstetricians through a fee-for-service model was perceived by participants as an impediment for the implementation of AMPs in healthcare settings. In a fee-for-service system, a predetermined amount is paid to healthcare professionals for each discrete service provided (e.g. consultation, office visit, test, and procedure), regardless of quality or outcomes (Miller, 2009). Obstetricians considered AMP role implementation as a possible financial and professional threat through autonomous midwifery practice. One obstetrician stressed the importance of avoiding negative financial implications for medical specialists if the implementation of AMPs is considered.

*Legal factors*

Several participants thought the legislation changes for midwifery practice in Belgium in 2006 (e.g. prescriptive authority and ultrasound skills in pregnancy) have increased the need for differentiation in the educational background and competencies of midwives. As these changes lead to an extension of midwives' legal competencies, they might pose an opportunity for the implementation of AMP roles (Table 4, Q3 and Q4).

Table 4 Illustrative quotes[§]

| Quote no. | Quote |
|---|---|
| Q1 | *"My opinion is that you need a legal and financial framework. If this is not established, we talk about goodwill. And look to the advanced nurse practitioners in the United States. Cyclically dozens of practitioners were recruited. Funding stopped and dozens of practitioners were laid off. That is not professional development. We do not want that. So I think you need a framework and financial resources in order for those practitioners to be independent of a fee-for-service model, as this makes everyone wanting a piece of the pie." (P5)* |
| Q2 | *"From a financial point of view, it is a cost. From a non-financial point of view that person might contribute to a smooth service of the clinic. And there could be a financial gain again. Indirectly, that person will be financially beneficial. But…Everything has to be made into a business case these days. And you can't write revenues, can you. Proving direct revenues is impossible. Process improvements might turn out to be financially beneficial."(P30)* |
| Q3 | *"Things we now try to fit into the basic midwifery training programme: diabetes, lactation consultancy, ultrasound, pelvic floor rehabilitation… And I think: that could be done by advanced practitioners. […] Because that is certainly a discussion we are currently having: what do we think should and should not be in basic midwifery education. Ultrasound examinations and pelvic floor rehabilitation are very good examples." (P1)* |
| Q4 | *"What we do have in Belgium, is that there are a number of legal provisions where a midwife can perform advanced tasks, albeit in good coordination with an obstetrician, and that includes ultrasound examinations. […] There are still more activities that – based on competence – could be executed by the midwife instead of obstetricians, including medication policy." (P5)* |
| Q5 | *"On the other hand, accreditation and quality improvement is everywhere, which should stimulate people to reflect on persons with the ability of facilitating quality improvement. And such persons inevitably are. […] Patient safety as well. Everybody is talking about it but… I think those people could really provide added value."(P2)* |

| | |
|---|---|
| Q6 | *"We are qualified for autonomous practice. In regard to normal birth, we practice without supervision. In that sense I am of the opinion that the concept of advanced midwifery practice is not directly transferrable from the concept of advanced practice nursing."(P1)* |
| Q7 | *"The fact that scientific research is one of the pillars of university hospitals, which is not limited to medical staff members and is deemed important for all professions, that I think is an opportunity."(P2)* |
| Q8 | *"Like medical specialists I think specialization is a bit of a trap as they may not treat a patient from a holistic perspective." (P1)* |
| Q9 | *"The reason why some head midwives might not be positive towards AMP† implementation is that they have to relinquish their role as experts. And I think some head midwives struggle with that as they want to keep the expert role in some domains." (P2)* |
| Q10 | *"I fear master educated midwives in another sense. I do not have a master's degree. And I am afraid that, within about two years' time, my position will be given to a midwife holding a master's degree." (P21)* |
| Q11 | *"In my opinion we then replace… Then it will not be the obstetrician making the decisions but it will be the AMP† deciding over a group of non-AMPs. Then you just shift: you might have a midwife as clinical leader but if you want to enhance your position as a midwife or you want to give more visibility to your professional qualifications, I do not think this should be appointed to the happy few. […] I think this should be shared by all midwives… It should not be turned into a midwife in the position of an obstetrician." (P27)* |
| Q12 | *"But is scientific research the core business of hospitals these days? As soon as this is not abundantly clear, should we really put in the effort?"(P13)* |

§The illustrative quotes were translated from Dutch into English for publication purposes only. No validation of the translation was performed.

†AMP: Advanced midwife practitioner

*Policy factors*

Participants reported that signals from healthcare policymakers underlining the necessity of AMP roles could provide an incentive for hospital boards of directors to develop and implement these roles. Firstly, the government could stimulate this through the establishment of care (innovation) programmes in which AMPs play a crucial part. Secondly, AMP roles and the expertise of AMPs could be formally defined and acknowledged by means of legislation. A clear definition and conceptualization of AMPs, unambiguous goals for these functions, and the availability of a professional, competence and educational profile were considered essential for the implementation of these roles. In addition, one participant believed that a national certification board should monitor the qualifications of all AMPs through (re-)certification. However, a participant warned of labeling midwives as AMPs and assigning them an official professional title. An official title could decrease the flexible deployment of these midwives in a rapidly evolving healthcare system if they hang on to their title.

Several head midwives, middle managers and a CNO pointed out new opportunities due to the heightened focus on the accreditation of healthcare organisations, quality improvement, and client safety in the Belgian healthcare system. They were convinced that AMPs could increase healthcare quality and client safety and improve client care by working as clinical leaders, facilitating the implementation of evidence-based practice, functioning as role models, studying client safety and formulating recommendations for process improvements in client care (Table 4, Q5).

## 3.2. Practice patterns

*Changes in healthcare model and delivery*

Several head midwives, middle managers and CNOs pointed out that recent changes in governmental policy leading to a shorter hospital stay in the postpartum period for women and newborns could be an opportunity for AMP role implementation. According to several participants, the new model of care stresses the importance of continuity of care and challenges seamless care [i.e. "the desirable continuity of care delivered to a patient in the healthcare system across the spectrum of caregivers and environments" (Canadian Society of Hospital Pharmacists and Canadian Pharmacists Association, 1999)]. Some stakeholders stated that AMPs could play a vital role in coordinating interdisciplinary and seamless care partnerships of healthcare organisations in primary and secondary care. As midwives in primary care work autonomously and independently, some participants believed AMPs could also play a vital role in developing care protocols and primary care guidelines, and in coaching primary care midwives to deliver evidence-based care.

Moreover, some participants believed the rapidly increasing technological developments in fertility, obstetrical, gynaecological and neonatal care, and the growing complexity in healthcare would increase the need for AMPs.

*Transferability of the advanced practice nursing model to midwifery*

Several (head) midwives and midwifery educators warned against automatically transferring the well-known concept of 'Advanced Practice Nursing' to midwifery without discipline specific adjustments (Table 4, Q6). According to these participants, nursing and midwifery are separate healthcare disciplines, which are reflected in major differences in practice domains, education and professional autonomy. Firstly, nurses have a much broader range of practice domains than midwives, calling for nursing professionals specializing in certain domains. Secondly, advanced practice nurses could be seen as practitioners with a level of autonomous practice between a regular nurse and a physician. As all midwives have the legal competence to autonomously care for clients with normal pregnancies, labour and birth, and in the postpartum period, the problem of having non-autonomous practitioners as in nursing is non-existent in midwifery.

*Pioneers for AMP role implementation*

Although some participants regarded the implementation of AMP roles possible in both peripheral and university hospitals, most argued that university hospitals would be most suitable as pioneers in implementing these roles (Table 4, Q7). Firstly, the success rate of AMP role implementation in university hospitals was deemed higher because scientific research is part of the mission statement of university hospitals. Therefore, the appointment of healthcare professionals focusing on research as part of their tasks is more likely in university hospitals. Secondly, participants believed that the more advanced care pathway implementation and the focus on evidence-based care in university hospitals provide opportunities for the creation of AMP roles. Thirdly, the greater need for further specialization of obstetricians in university hospitals due to clients with more complex care needs compared to peripheral hospitals strengthens the call for midwives to expand their practice and develop new roles. However, it was perceived vital by a majority of the participants that such role expansion is carried out in areas of care where the implementation of AMPs is seen as helpful by medical specialists, e.g. by taking over medical tasks with limited complexity in (in)fertility and antenatal care (e.g. routine ultrasound examinations, preconception or genetic counseling).

### 3.3. Healthcare needs of the population

Participants seldom spontaneously discussed the healthcare needs of the population as a driver for AMP role implementation. If addressed, participants' opinions on the necessity of such roles from a client population perspective differed. One participant pointed out that one of the main goals of AMP roles internationally is to decrease maternal and neonatal morbidity and mortality. As perinatal morbidity and mortality are already very low in Belgium, the participant felt the 'sense of urgency' for implementing advanced midwifery practice might not be high enough. Furthermore, several

midwives believed that the extensive specialization in one area of client care could jeopardize a holistic approach of clients' care needs (Table 4, Q8).

However, several participants believed that AMPs could have a positive impact on the optimization of client care through improvement of quality of care, client safety, continuity of care and tailoring care. One participant also thought that AMPs are ideally placed to increase client participation.

### 3.4. Workforce issues

*Managers' attitudes towards AMP role implementation*

Chief nursing officers believed that a positive attitude of middle managers and head midwives towards AMPs and the acknowledgement of their added value are essential for the successful implementation of these roles. Several participants indicated also the support of obstetricians in clinical managerial positions (e.g. heads of medical departments) as a prerequisite.

According to some middle managers, a negative attitude of head midwives towards AMPs could prevent or complicate the development and implementation of these roles. Head midwives could hamper the success of AMP roles out of fear of losing their own authorization as clinical experts for their employees (Table 4, Q9). Some participants believed that this threat to head midwives is larger in comparison with head nurses, explaining that advanced nurse practitioners or clinical nurse specialists often work cross-sectional in several hospital wards. The limited number of midwifery care domains (obstetrical, gynaecological, neonatal, and fertility care) and wards where AMPs could be employed increase the chance of AMPs and head midwives being in competition with each other on clinical issues compared to nursing. A clear division of responsibilities and role delineation was considered essential to overcome such barriers.

*Midwives' attitudes towards AMP role implementation*

Several head midwives and middle managers believed that the attitude of midwives towards AMP implementation is important. Participants indicated that a bottom-up demand for such roles, e.g. due to a need for expertise and support in complex clinical practice situations, could facilitate implementation. One head midwife stressed that AMPs should be clinical and not hierarchical leaders. As midwives might hesitate to ask a hierarchical leader for advice regarding client care in fear of being perceived as professionally incompetent, AMPs could lower the threshold for midwives seeking advice in complex care situations. Several midwives without a master degree but holding consultant or expert positions, voiced the fear that master educated midwives would be preferred to do their job in the future (Table 4, Q10). One participant also voiced the concern that AMPs could become clinical decision makers in disfavor of the autonomy of other midwives, thus taking on the unwanted role of 'midwifery obstetricians' (Table 4, Q11). Some participants feared that defining some

midwives as 'advanced practitioners' could result in non-AMP midwives to feel inferior to AMPs and could lead to a decrease in the competence level of non-AMPs. If care for clients with complex care needs would be provided exclusively by AMPs, non-AMPs could be deprived for opportunities to use their skills in complex care situations.

*Knowledgeability regarding AMP roles*

Participants mentioned the lack of understanding of related healthcare disciplines such as obstetricians with regard to AMP roles as a barrier. Several stakeholders therefore believed it will be vital to inform other healthcare professionals about role descriptions, education, skills and competencies of AMPs, and to create a sense of urgency for the implementation of such roles.

### 3.5. Education

Opinions on the required educational level of AMPs varied. The majority of the participants believed that the current three-year midwifery education in Flanders, which is leading to a professional bachelor's degree, is insufficient to prepare midwives for practice beyond a basic level. Several participants considered master's level preparation as a minimum standard to acquire the necessary competencies in leadership, ethical decision making, change management, and research. One midwife with an AMP profile and one middle manager thought a doctoral degree would be the most appropriate level for AMPs if they were expected to innovate care, initiate and conduct research activities. However, no gender related differences in opinions on the preferred educational level of AMPs were found among participants.

According to participants, AMPs should have excellent communication, planning, organising, coaching, critical thinking, and research competencies. However, definitions of research competencies differed. These differences in opinion on the required level of research skills for AMPs were not related to gender differences among participants. Some participants argued that AMPs should be able to conduct research themselves and evaluate their own practice by setting up small research projects. Some participants questioned conducting research as the 'core business' of hospitals and they therefore dispute the need for the implementation of midwifery roles in which the initiation and execution of research is part of the job profile (Table 4, Q12). These participants suggested that research in care settings should rather be initiated by researchers at universities or university colleges instead of by clinicians. Others described research skills as the ability to 'handle scientific research' and as transferring research results from the scientific literature into midwifery practice. According to these participants, AMPs should be able to critically evaluate and improve current practice through the use of research results. From this point of view, education at master's level was not deemed essential by some participants. A master degree was rather seen as one of several possible educations to acquire the necessary basic scientific knowledge

by midwives in expert roles. Other participants deemed a master's programme too general in nature to educate midwifery experts. These stakeholders find postgraduate courses, i.e. specialist non-degree courses leading to a diploma, more appropriate for training midwives as experts in one or more domains of midwifery practice.

Several participants experienced that midwives were seen more as experts after finishing a postgraduate course by their colleagues than they did after completion of a master programme. To take on the expert role, the majority of participants believed that AMPs should have some years of practice experience.

## 4. Discussion

This study identified multiple barriers and facilitators influencing the implementation of AMPs in healthcare settings. As discussed below, several of these are connected, adding to the complexity of AMP role implementation.

According to nearly all participants, budgetary constraints on a governmental level are one of the main factors hampering the implementation of AMP positions. This finding is in line with the views of policy-makers regarding the implementation of specialist and advanced practitioner roles in Ireland (Begley et al., 2014). Similarly, Sangster-Gormley et al. (2011) mentioned the lack of established funding mechanisms as a barrier to nurse practitioner role implementation (Sangster-Gormley et al., 2011). In line with findings from Doetzel et al. (2016) on barriers and facilitators for implementation of nurse practitioners in the emergency department (Doetzel et al., 2016), the fee-for-service model is perceived as a serious impediment for the implementation of AMPs in Flemish healthcare settings. Our participants reported that AMPs might pose a financial threat to obstetricians. This might hinder the implementation of AMP roles considerably, as participants stressed the importance of support from medical specialists for AMP role implementation. Therefore, it seems paramount that the structural implementation of AMPs on a national level is directed by governmental regulations.

According to several participants, underpinning the impact of AMPs on a clinical and strategic level seems vital for governmental funding of these positions and financing on the level of cost-effectiveness driven healthcare organisations. However, the client perspective as an important driver for AMP role implementation was limitedly discussed in the interviews even when this was introduced specifically. Similar to results of Casey et al. (2017b), participants pointed out that it might be challenging to measure direct outcome improvements of AMP care. Although the amount of evidence illustrating the important part AMPs play in healthcare settings is growing (Begley et al., 2010; Newhouse et al., 2011; Weitz et al., 2013; Begley et al., 2014), quantitative data on the cost-effectiveness of AMP care and on the impact on professional and organisational outcomes uniquely attributable to AMPs are lacking. Since conducting research is clearly described as part of the competence profile of AMPs internationally (National Council for the Professional Development of Nursing and Midwifery, 2008), participants' varied interpretation of AMPs' research skills might be of concern. Although some

participants stated that AMPs should be capable of initiating and conducting research, some questioned the necessity of such skills as research is not one of the core tasks of healthcare organisations. Others described research skills as being competent to translate the scientific literature into midwifery practice. However, besides research skills of AMPs by reviewing the literature and implement evidence-based innovations, clinical research by AMPs could contribute to the advancement of midwifery practice and midwifery as a discipline. According to Begley et al. (2014), advanced practitioners experience challenges finding time for research activities as the large need for their services requires that they devote the majority of their time to clinical practice and associated activities (Begley et al., 2014). If healthcare managers responsible for defining AMP job contents are not convinced of the importance of AMP research activities, too much focus in the AMP role could be on clinical work. This might threaten the advancement of midwifery as a profession.

Participants mentioned several reasons for the apprehensiveness of head midwives and midwives regarding the implementation of AMPs in Flemish healthcare settings, such as fear of losing recognition as a clinical expert by midwifery staff and of creating another level of 'hierarchy' by midwives. Ayala et al. (2014) shed light on similar tensions in the academisation process of nursing in Chile, showing that the individual professional progress of nurses is viewed negatively by their peers (Ayala et al., 2014). The authors suggest two explanations for tensions between nurses with different degrees working next to each other. Firstly, additional qualifications might lead to increasing employability and income, resulting in nurses competing to climb the social ladder (Ayala et al., 2014). Secondly, individual professional progress is perceived incompatible with the socially attributed identity of selflessness in nursing (Ayala et al., 2014). Similarly, Anderson (2018) stated that negative gender expectations have led to nursing been associated with caring rather than leading. Therefore, the author suggested that advanced practice nurses must overcome these gender expectations in order to develop themselves as leaders (Anderson, 2018).

The apprehensiveness of midwives towards advanced practitioner roles might impede implementation, as middle managers and head midwives pointed out the importance of midwives experiencing the need for such roles themselves. As Sangster-Gormley et al. (2011) mentioned, advanced practitioner roles are implemented in established practice settings with a unique culture and already existing relationships. Therefore, the implementation of new roles is challenging (Sangster-Gormley et al., 2011). Given this complexity, it would be useful to understand the underlying psychological and sociological processes associated with the introduction and implementation of advanced practice roles in the specific culture of a healthcare organisation and within the midwifery profession.

### 4.1. Study limitations

To our knowledge, this study was the first to uncover factors influencing AMP role implementation in Flemish healthcare settings, thereby enhancing the limited knowledge on AMP role implementation internationally. Nevertheless, some limitations of our findings should be discussed. Firstly, the interviewer was known to several of the participants. To avoid assumptions by the participants on the opinion of the interviewer regarding the topic, the inductive nature of the data collection was stressed. The transcribed interviews indicated that the participants very openly voiced their opinions. This leaves the researchers to believe that the interviewer knowing several of the participants might have contributed to more instead of less openness. Although literature on the methodological implications of interviewing peers is limited (Coar and Sim, 2006), some authors described that interviewing peers might enhance openness of the participants and trust in the researchers (Holloway and Wheeler, 2010). An equal relationship between researchers and participants could enhance co-operation and responsiveness as participants might feel safe enough to allow themselves a form of vulnerability (Chew-Graham et al., 2002). In addition, researcher triangulation was used to ensure dependability and credibility of the findings. Secondly, the interviewer experienced that participants having no or limited experience with advanced practitioner roles had some difficulty grasping the concept of such roles.

### 4.2. Implications for future research and practice

This study identified several factors influencing AMP role implementation on the level of healthcare organisations and hospital departments. Therefore, CNOs, middle managers and head midwives could take them into account when they are interested in planning AMP role implementation in their healthcare setting. Furthermore, several opportunities for the implementation of such roles have been mentioned. As areas such as quality of care improvement, client safety, and care innovation are high on the policymakers' agenda, pilot projects for AMP role implementation should be considered. Research evaluating AMP attributable impact on clinical, healthcare organisational and professional outcomes should be executed when setting up such projects, since results could substantiate policy decisions regarding structural funding of these roles. In addition, research examining the current level of midwifery advancement in healthcare settings, e.g. the extent to which evidence-based practice is implemented in midwifery practice, might uncover practice areas in which advancement has been sparse. This information could indicate in which areas the implementation of AMPs would be most useful. Furthermore, a questionnaire based quantitative study might cast light on the order of magnitude with which these factors could influence the implementation process in university and peripheral hospitals, and in primary care. Finally, exploration of the psychological and sociological background of factors potentially influencing the implementation of AMPs mentioned in this study (e.g. gender and gender role stereotypes) might deepen our understanding of underlying processes.

The Sex and Gender Equity in Research guidelines might provide valuable guidance in the design, implementation and reporting of such studies (Heidari et al., 2016).

## 5. Conclusion

This study uncovered multiple factors on governmental, healthcare organisational, and workforce level that are perceived to affect AMP role implementation. Results illustrate the complexity of the implementation process for such roles, highlighting the need for a well-thought-out implementation plan with the involvement of all relevant stakeholders. As university hospitals are seen as pioneers for the implementation of AMPs, pilot projects in these hospitals might be useful. Measurement of AMP attributable clinical, organisational and professional outcomes should be undertaken to guide policymakers' decisions on structural funding and embedment of these roles.

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## CHAPTER 4

# Leadership in nursing and midwifery: Activities and associated competencies of advanced practice nurses and midwives

Chapter based on:

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*Shared first authorship, both authors contributed equally

## ABSTRACT

**Aim:** To explore the practice profile and competencies of advanced practice nurses (APNs) and midwives (AMPs), and factors associated with task non-execution.

**Background:** Advanced practitioner roles are increasingly implemented internationally. Unofficial role introduction led to confusion regarding task performance. Studies examining associations between APNs'/AMPs' task performance and competency levels, and factors associated with task non-execution are lacking.

**Method:** A cross-sectional study among APNs/AMPs in Flanders (Belgium) explored tasks and competencies in seven domains: clinical/professional leadership, change management/innovation, research, clinical expertise/guidance/coaching, consultation/consultancy, multidisciplinary cooperation/care coordination and ethical decision-making. Task performance and competency level frequencies were calculated. Regression analysis identified factors associated with task non-execution on domain/ item level.

**Results:** Participants (n = 63) executed tasks in all domains. Task non-execution related to research and clinical expertise was associated with work setting; task non- execution regarding care coordination and ethical decision-making was associated with competency perception. Several tasks were performed by few APNs/AMPs despite many feeling competent. Five of ten tasks performed by fewest participants belonged to the leadership domain.

**Conclusion and implications for nursing and midwifery management:** Supervisors could play an important part in APNs'/AMPs' role development, especially regarding leadership and tasks executed by few participants. Future studies should provide in-depth knowledge on task non-execution.

## 1. Introduction

The introduction and development of "Advanced Practice Nursing" was one of the most important developments in nursing during the twentieth century (Oddsdottir & Sveinsdottir, 2011). The International Council of Nurses (ICN) defines an advanced practice nurse (APN) as "a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which she/ he is credentialed to practice. A master's degree is recommended for entry level" (Shober & Affara, 2006). Compared to advanced practice nursing and with the exception of certified nurse-midwives as one of the four major APN roles defined in the consensus model for advanced practice registered nurse regulation (2008), advanced midwifery practice is a more recent development (APRN Consensus Work Group & National Council of State Boards of Nursing APRN Advisory Committee, 2008). Apart from primarily Anglo-Saxon countries (e.g. Ireland, United Kingdom), advanced midwifery practice has been explored to a lesser extent internationally (Goemaes et al., 2016). However, it is clear that advanced practice covers a variety of roles in which nurses and midwives work at an advanced level, such as clinical and professional leader, innovator, researcher, policy advisor, expert, consultant, educator and ethical decision facilitator (Hamric, Hanson, Tracy, & O'Grady, 2013).

An increasing number of countries have implemented advanced practitioner roles over the past decades (Jones, 2005), which has led to confusion about advanced practitioners' titles, roles and scope of practice internationally (Jokiniemi, Pietila, Kylma, & Haatainen, 2012). Attempts have been made to clarify the content of advanced practice and the practice profile of APNs with the aim of bringing stability and universality to its meaning (Dowling, Beauchesne, Farrelly, & Murphy, 2013; Gardner, Duffield, Doubrovsky, & Adams, 2016; Sevilla Guerra, Salmerón, & Zabalegui, 2018). Furthermore, increasing attention has been paid to measuring the impact of advanced practitioners on a clinical, professional and organisational health care level (Begley, Murphy, Higgins, & Cooney, 2014). A growing number of publications show that advanced practitioner care is superior to the usual/physician-only care, for example, in reducing mortality in intensive care units (Woo, Lee, & Tam, 2017), post-discharge mortality in surgical patients (Bryant-Lukosius et al., 2015), hospital readmission rates (Chavez, Dwyer, & Ramelet, 2018; Mora, Dorrejo, Carreon, & Butt, 2017) and invasive interventions during childbirth (Newhouse et al., 2011). Advanced practitioner care improves adherence to treatment recommendations, the number of immunized infants at 8 weeks (Bryant-Lukosius et al., 2015) and clinical outcomes such as blood pressure, glycated haemoglobin levels and lipid profile in elderly patients (Chavez et al., 2018). Advanced practitioner care also reduces the hospital length of stay for very low birthweight infants and post-partum mothers (Bryant-Lukosius et al., 2015), reduces waiting lists (Begley et al., 2014) and shortens waiting time during service delivery (Jennings, Clifford, Fox, O'Connell, &

Gardner, 2015). In addition, APN/AMP care improves the continuity of care (Begley et al., 2014) and patient satisfaction (Jennings et al., 2015; Woo et al., 2017).

Advanced practitioners' leadership capability has been increasingly highlighted in the international literature as an important factor in the provision of improved patient outcomes (Higgins et al., 2014; Wong, Cummings, & Ducharme, 2013). Stimulating advanced practitioners to fully enact their leadership role is also vital because they are considered important resources for building leadership capacity in nursing and midwifery (Elliott, Begley, Sheaf, & Higgins, 2016). In fact, building leadership capacity, that is, organisational-level systems and practices to increase the number and level of leaders, has become a priority in health care (Elliott, 2017). Leadership capability and capacity building are deemed essential to meet current and future challenges in a health care system that is undergoing major changes (Elliott, 2017; Lamb, Martin-Misener, Bryant-Lukosius, & Latimer, 2018). These changes are triggered by economic challenges, pressures of an increasing ageing population, the growing number of people living with long-term illness and having complex care requirements, health and safety concerns associated with stressful work environments, an increasing number of leaders nearing retirement and projected workforce shortages (Lamb et al., 2018; Wong et al., 2013). Although the entire nursing and midwifery workforce should be stimulated to participate in leadership or assume leadership positions at all levels (Elliott et al., 2016; IOM, 2011), APNs and AMPs are particularly well suited for the leadership role. After all, they have completed graduate education, possess an expert level of knowledge and complex decision-making skills, and have additional responsibility for practice innovation and strategic professional development (Elliott et al., 2016; Lamb et al., 2018). In the advanced practice context, leadership is characterized by mentoring, innovation and activism (Hamric et al., 2013). Elliott et al. (2016) define clinical leadership in the advanced practice context as "activities supporting the development of practice in the service," while professional leadership is described as "activities supporting developments outside of the service at national or international level."

As in many countries, the introduction of advanced practice roles in health care is frequently discussed in Belgium (Belgian Federal Public Service Health Food Chain Safety & Environment, 2016). The implementation of academic master's programmes for nurses and midwives in the 1980s has led to the unofficial introduction of these roles (De Geest et al., 2008). Advanced practitioner roles in Belgium are mainly implemented in hospital settings. Despite the progress in educational programmes and professional practice, the legal regulation and formal recognition of APN and AMP roles in Belgium are limited. A formal system or regulatory body for the registration and certification of APNs and AMPs has not been established. Therefore, the "advanced practitioner" job title is not protected in Belgium and its use is not officially regulated. This results in confusion regarding role expectations and performance among APNs/AMPs, their hierarchical and

functional supervisors, and nurses and midwives not in advanced practice roles. As the task performance and self-reported competency level of advanced practitioners in Belgian hospitals are currently unclear, greater knowledge and understanding are required about the extent to which APNs and AMPs perform advanced practice activities in their current positions. Therefore, the purpose of this study was (a) to explore the practice profile of APNs and AMPs in Flanders, the northern part of Belgium, (b) to examine the extent to which these practitioners feel competent in advanced practice task performance and (c) to identify factors associated with task non-execution. This information is important to support a legitimate debate about job differentiation and task reallocation in health care, and to provide a basis for accurate job descriptions and for the development of advanced practitioner curricula and certification requirements (Sastre-Fullana et al., 2017). In addition, the identification of factors associated with task non-execution could substantiate measures allowing advanced practitioners to reach their full potential as strong sources for increased access to quality health care and as leaders within and beyond the health care organisation. To the authors' knowledge, studies examining the association between advanced practitioners' task performance, their competency levels and factors related to task non-execution are lacking internationally. Finally, the results of this study could contribute to the comparison of advanced practice roles internationally.

## 2. Methods

### 2.1. Design

A questionnaire-based, cross-sectional study was executed to examine APNs' and AMPs' task performance and competencies, and factors associated with task non-execution.

### 2.2. Setting and sample

APNs and AMPs working in peripheral and university hospitals in Flanders were included in the study if they met the following criteria: (a) work in direct patient/client care, (b) hold a master's degree in a health-related discipline, (c) serve in a variety of roles as described in Hamric's model of advanced practice nursing (Hamric et al., 2013) and (d) be mandated from hospital management to work as advanced practitioner. As the use of an "advanced practitioner" job title is not officially regulated and different terminology for APNs across hospitals is used, participants were not required to have an advanced practitioner job title for inclusion. Participants from both university and peripheral hospitals were included as these types of hospitals provide different contexts for care provision. Besides providing the care of peripheral hospitals, the mission statement of university hospitals includes the provision of expert care in complex care situations, care

innovation and development, clinical training for (medical) students and specialists, and research (Royal Decree of 7 June, 2004).

Advanced practitioners working in primary care, mental health care and rehabilitation were excluded because of the following reasons: (a) the number of advanced practitioners in these health care settings is very limited in Belgium, and (b) there is a significant difference in employment context compared to advanced practitioners in general hospitals.

All general hospitals in Flanders were listed based on data from the website of the Federal Public Service Health, Food Chain Safety and Environment. Subsequently, hospital management (most often the chief nursing officer) was asked by telephone or e-mail (n = 66) for contact details of nurses and midwives meeting the inclusion criteria. Ten general hospitals did not respond despite several contact attempts. According to the hospital management, no advanced practitioners were employed in 39 hospitals. Eight AMPs and 79 APNs meeting the inclusion criteria were identified in 17 hospitals.

### 2.3. Instrument

A questionnaire was used to inventory the competencies and task performance of APNs and AMPs. The questionnaire's structure was based on the domains defined by Hamric et al. (2013): (a) clinical and professional leadership, (b) change management and innovation, (c) research, (d) clinical expertise, expert guidance and coaching, (e) nurse/midwife consultation and consultancy, (f) multidisciplinary cooperation and coordination of care, and (g) ethical decision-making (Hamric et al., 2013). A questionnaire for the Belgian context of APNs was drafted using (a) a questionnaire regarding the task performance of clinical nurse specialists and physician assistants used in a previous Dutch study (Laurant, Camp, Boerboom, & Wijers, 2014), (b) job descriptions of one APN working in a university hospital and two APNs working in peripheral hospitals in Flanders and (c) non-participant 1-day observations of six APNs. The draft questionnaire was sent to six APNs with a minimum of 5 years of APN experience and working in different areas of specialization for content validation. These APNs were asked to critically evaluate the questionnaire in preparation of a consensus meeting, during which all items of the questionnaire were assessed for relevance and clarity. Opportunities were provided to indicate missing items, but no new items were added. Two items were each divided into two separate items. After minor adjustments to increase the consistent wording of some of the items, a final version of the questionnaire was approved by the six APNs and the researchers [AVH, ED].

As nursing and midwifery are two separate disciplines in Belgium with different educational programmes, the need for adjustments of the APN questionnaire for the AMP survey was checked using (a) midwifery legislation (Coordinated Law on the execution of health care professions of 10 May 2015), (b) the professional and competency profile of Belgian midwives (Federal Council for Midwives, 2015), (c) non-participant observations of five AMPs and (d) semi-structured face-

to-face interviews with five AMPs. No job descriptions of AMPs were found. A two-round Delphi procedure with 10 experts was executed for content validation of the AMP questionnaire. The expert panel consisted of midwives with the following profile: AMP, specialized midwife, head midwife, head of bachelor education in midwifery, midwifery researcher. In the first round, the experts were asked to score the relevance and clarity of the socio- demographic questions and all items using a 5-point Likert scale. Comprehensiveness of the items was assessed for each domain by asking the experts for notable omissions. A content validity index (CVI) was calculated for each sociodemographic question and each item. Two items were removed from the APN questionnaire for AMPs due to insufficient CVI scores according to Lynn (1986): "guidance of family/carers" and "patient home visits." The following items were added as AMP tasks based on the experts' comprehensiveness suggestions: "prescription authority", "pelvic floor re-education", "functional ultrasound during pregnancy", "inform the patient in the context of scientific research", "make arrangements with health care professionals about the division of tasks and responsibilities" and "signaling ethical problems of midwifery colleagues or other health professionals". Six experts participated in the second round, in which only reworded or added items were assessed for clarity and relevance. All reworded and added items were retained as CVIs were satisfactory.

The APN and AMP questionnaire consisted of 78 and 82 tasks, respectively. For each task, APNs and AMPs reported whether they carried out the task or not (yes/no) and to what extent they felt competent for this task (competent/moderately competent/ incompetent). Sociodemographic variables and the percentage of working time APNs/AMPs spent on direct patient contacts (tasks performed in the presence of or with involvement of the patient, e.g. patient education), on indirect patient-related contacts (tasks performed for the benefit of the patient but not necessarily in the presence of the patient, e.g. updating patient records), on non-patient-related contacts (tasks not related to direct patient care, e.g. involvement in teaching) and tasks not belonging to their job profile (e.g. operational management-related tasks) were also registered.

### 2.4. Data collection

An invitation for study participation containing a reminder about the inclusion criteria was e-mailed to all identified APNs and AMPs. The APNs received a link to the electronic questionnaire (created in LimeSurvey) in autumn 2015. Responses were stored anonymously in the database. AMPs received a Word copy of the questionnaire in spring 2016. Completed AMP questionnaires could be sent back to the researchers either by mail or e-mail. Responses of AMPs were anonymized. A reminder of the invitation for study participation was sent to all eligible APNs and AMPs after a fortnight.

## 2.5. Data analysis

For each task, task performance and competency level frequencies were calculated. For this purpose, the level of perceived competency was dichotomized into "incompetent" versus "moderately competent" or "competent." Chi-squared tests were used to assess differences in task performance and competency by type of health care setting (peripheral vs. university hospitals), the APN/AMP position appointment percentage (≤ 50% vs. > 50%), the number of years as an advanced practitioner in the specialty (≤ 5 years vs. > 5 years), task performance (carrying out vs. not carrying out), financing source for the advanced practitioner ([partial]funding by a medical head of department or doctor vs. no physician funding) and hierarchical supervisor of the advanced practitioner ([partial] supervision by a medical head of department or doctor vs. no physician supervision). Fisher's exact tests were used when the expected cell count was below 5.

The following variables were entered in a multivariate binary logistic regression model if $p < 0.25$ in a univariate logistic regression analysis: type of health care setting, position appointment percentage, number of years of work experience as an advanced practitioner in the specialty, competency level, financing source for the advanced practitioner and type of hierarchical supervisor (Bursac, Gauss, Williams, & Hosmer, 2008). If the univariate logistic regression analysis resulted in $p < 0.25$ for only one independent variable, results for this analysis were reported. p-values < 0.05 were considered statistically significant.

Furthermore, mean task execution and competency scores were calculated for each domain. For this purpose, binary task execution and competency scores on all items were considered as metric data (Velleman & Wilkinson, 1993). Task execution and competency domain scores were considered as missing when more than 20% of the domain items were left open. Reliability testing of the task execution domain scores yielded Cronbach's alphas between 0.65 and 0.82, except for the domain of "clinical expertise, expert guidance and coaching". An acceptable Cronbach's alpha of 0.60 was reached by deleting the following item: "Supervision/intervision with other health care professionals" (Hair, Black, Babin, & Anderson, 2014). All analyses regarding the domain of "clinical expertise, expert guidance and coaching" were executed without the deleted item.

Task execution was dichotomized into "task non-execution for ≥ 25% of the tasks in the domain" versus "task non-execution for < 25% of tasks in the domain" in order to execute a multivariate binary logistic regression analyses for task execution domain scores. A multivariate logistic regression analysis was executed with the following independent variables if $p < 0.25$ in a univariate logistic regression analysis: type of health care setting, position appointment percentage, number of years of work experience as an advanced practitioner in the specialty, competency domain score, financing source for the advanced practitioner and type of hierarchical supervisor. Results for the univariate logistic regression analyses were

reported if only one independent variable resulted in $p < 0.25$. All statistical analyses were done using IBM SPSS Statistics 23.

### 2.6. Ethical considerations

The study was approved by the Central Ethics Committee of Ghent University Hospital (Belgium) (B670201524082 and B670201525527). Advanced practitioners received an information letter prior to the study indicating that completion and return of the survey implied consent to study participation.

## 3. Results

### 3.1. Sample characteristics

Figure 1 shows that a total of 92 questionnaires were obtained, of which 29 were excluded as they did not meet the criteria for data analysis (response rate: 68.5%).

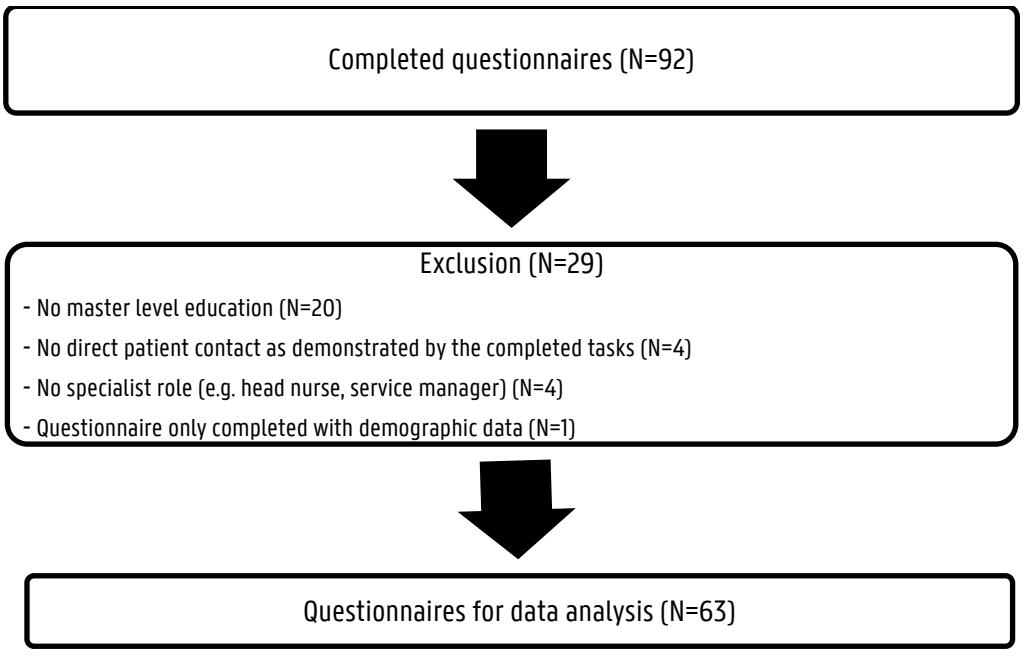


Figure 1. Flowchart of participant selection process for data analysis

Table 1 illustrates the demographics of the participants (n = 63), the majority of which were APNs. The largest proportion of APNs/AMPs was female (87.3%), aged between 23 and 40 years (69.8%), and held a position in a university hospital (66.7%). The majority of participants had < 5 years of experience as advanced practitioner (60.3%), and 58.7% were appointed between 76% and 100% as APN/AMP. A combination of an advanced practitioner position with another function was carried out by 38.1% of the participants. Hospitals were the sources of funding for the majority of advanced practitioner positions (88.9%). Most participants had a middle manager as a hierarchical supervisor (58.7%), while doctors were the functional supervisors for over half of the advanced practitioners (52.4%).

On average, APNs and AMPs spent 43.3% of their working time on direct patient contacts, 22.6% on indirect patient-related contacts, 25.1% on non-patient-related contacts and 8.6% on tasks not belonging to their APN/AMP job profile.

Table 1. Demographic characteristics of the participants (n=63)

| Characteristics | n | % |
|---|---|---|
| Age | | |
| 23-30 years | 22 | 34.9 |
| 31-40 years | 22 | 34.9 |
| 41-50 years | 14 | 22.2 |
| >50 years | 5 | 7.9 |
| Gender | | |
| female | 55 | 87.3 |
| male | 8 | 12.7 |
| Education | | |
| Master of Science in Nursing and Midwifery | 40 | 63.5 |
| Master of Science in Health Education and Health Promotion | 2 | 3.2 |
| Master of Science in Health Care Management and Policy | 4 | 6.3 |
| Master in Medical-Social Sciences | 17 | 27.0 |
| Master in Primary Health Care | 1 | 1.5 |
| Healthcare setting | | |
| University hospital | 42 | 66.7 |
| Peripheral hospital | 21 | 33.3 |

| | | |
|---|---|---|
| Number of hospital beds | | |
| 0-199 | 2 | 3.2 |
| 200-299 | 4 | 6.3 |
| ≥450 | 57 | 90.4 |
| APNs[*]: nursing specialization[†] | | |
| Oncology/Hematology | 13 | 20.6 |
| Pain | 10 | 15.9 |
| Wound care | 8 | 13,3 |
| Anesthesiology | 5 | 7.6 |
| Cardiology | 5 | 7.6 |
| Pediatric nursing | 5 | 7.6 |
| Pneumology and tuberculosis | 3 | 4.8 |
| Diabetes care | 2 | 3.2 |
| Nephrology | 2 | 3.2 |
| Neurology | 2 | 3.2 |
| Surgery | 2 | 3.2 |
| AMPs[§] | 5 | 7.9 |
| Number of years of work experience as an advanced practitioner in the current specialization | | |
| 1-5 | 38 | 60.3 |
| 6-10 | 17 | 27.0 |
| 11-15 | 6 | 9.5 |
| 16-20 | 2 | 3.2 |
| Number of years of work experience in current specialization before being advanced practitioner | | |
| <5 | 13 | 39.4 |
| 5-9 | 13 | 39.4 |
| 10-14 | 4 | 12.1 |
| >15 | 3 | 9.1 |

| | | |
|---|---|---|
| Position appointment percentage | | |
| 0-25% | 5 | 7.9 |
| 26-50% | 18 | 28.6 |
| 51-75% | 3 | 4.8 |
| 76-100% | 37 | 58.7 |
| Financing source for the advanced practitioner | | |
| Hospital | 56 | 88.9 |
| Medical head of department/doctors | 8 | 12.7 |
| External financing | 6 | 9.5 |
| Number of advanced practitioners simultaneously having another position (combined positions) | | |
| No | 39 | 61.9 |
| Yes | 24 | 38.1 |
| Hierarchical supervisor of the advanced practitioner | | |
| Middle management | 37 | 58.7 |
| Chief nursing officer | 21 | 33.3 |
| Doctor(s) | 16 | 25.4 |
| Head nurse/head midwife | 12 | 19.0 |
| Medical head of department | 12 | 19.0 |
| Functional supervisor of the advanced practitioner | | |
| Doctor(s) | 33 | 52.4 |
| Medical head of department | 21 | 33.3 |
| Middle management | 19 | 30.2 |
| Chief nursing officer | 8 | 12.7 |
| Head nurse/head midwife | 7 | 11.1 |
| None | 3 | 4.8 |

[*]APN: advanced practice nurse

[†]An APN could check multiple domains of specialization simultaneously and register additional domains of specialization via the 'other' option. The following domains of specialization were registered only once or as the option 'other': dermatology and venereology, geriatrics, infectious diseases, orthopedics, plastic surgery, urology, hemophilia, nutrition, multiple sclerosis, cardiac transplantation, and palliative care.

[§]AMP: advanced midwife practitioner

### 3.2. Practice patterns and factors associated with task non-execution by domains

Table 2 shows that none of the independent variables in the study were associated with task non-execution on a domain level for clinical and professional leadership, change management and innovation, and nurse/midwife consultation and consultancy. However, the non-execution of at least 25% of the activities in the domains of research and clinical expertise was associated with the type of health care setting. The odds of APNs/AMPs in university hospitals performing < 75% of the activities in the domain of research were smaller than the odds of APNs/AMPs in peripheral hospitals (OR 0.14, 95% CI 0.03–0.58). Similarly, APNs/AMPs in university hospitals were more likely to perform at least 75% of activities in the clinical expertise domain compared to colleagues in a peripheral hospital (OR 0.06, 95% CI 0.01–0.33). Non-execution of at least 25% of the activities in the multidisciplinary cooperation and ethical decision-making domain was associated with the average competency domain score. Advanced practitioners who felt incompetent for < 25% of the activities in these domains were more likely to execute at least 75% of the activities.

### 3.3. Practice patterns and factors associated with task non-execution by items

As leadership capacity is essential for innovation and advancement in nursing and midwifery (Elliott et al., 2016), the results below mainly focus on the leadership, innovation and research domain. For the sake of completeness, however, results of multivariate binary logistic regression analyses for the domains of clinical expertise, expert guidance and coaching, nurse/midwife consultation and consultancy, multidisciplinary cooperation and coordination of care, and ethical decision-making are shown in Addendum 1.

Table 2. Results for multivariate binary logistic regression analysis for ≥ 25% domain task non-execution†

| Task non-execution for ≥ 25% of tasks / domain (dependent variable) | Independent variables | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type of healthcare setting[a] | | Position appointment percentage[b] | | Number of years of APN/AMP' experience[c] | | Competence perception level[d] | | Financing source[e] | | Type of hierarchical supervisor[f] | |
| | Odds ratio | P | Odds ratio | P | Odds ratio | P | Odds ratio | P | Odds ratio | P | Odds ratio | P |
| Clinical and professional leadership | .185 | .144 | .248 | .134 | NA | NA | .154 | .105 | NA | NA | .124 | .069 |
| Change management and innovation | NA | NA | NA | NA | .000 | .998 | .154 | .055 | NA | NA | NA | NA |
| Research skills | .136 | .007* | NA | NA | .651 | .501 | .237 | .063 | NA | NA | NA | NA |
| Clinical expertise, and expert guidance and coaching | .061 | .001* | 3.296 | .105 | .607 | .483 | NA | NA | .624 | .658 | .471 | .253 |
| Nurse/midwife consultations and consultancy | NA | NA | .343 | .075 | NA | NA | NA | NA | NA | NA | NA | NA |
| Multidisciplinary cooperation and coordination of care | NA | NA | NA | NA | .485 | .307 | .101 | .012* | NA | NA | NA | NA |
| Ethical decision-making skills | .382 | .143 | NA | NA | NA | NA | .125 | .011* | NA | NA | .355 | .118 |

Reference categories: [(a)] working in a peripheral hospital; [(b)] position appointment percentage ≤ 50%; [(c)] number of years of work experience as an advanced practitioner ≤ 5 years; [(d)] feeling incompetent for ≥ 25% of the tasks per domain; [(e)] financing source is a doctor or medical head of department; [(f)] a doctor or medical head of department is (one of the) hierarchical supervisor(s) of the APN/AMP. ¶NA (not applicable) due to p ≥ 0.25 for independent variable in univariate logistic regression analysis.

*p < 0.05; **p < 0.001

### 3.4. Clinical and professional leadership

As shown in Table 3, participants' focus regarding clinical and professional leadership seemed mainly directed towards guideline and care protocol development within the hospital (95.0%), extending and maintaining contacts with advanced practitioners in other health care organisations (85.0%), and participating in policy development meetings regarding domain-specific topics (81.7%).

A minority of APNs/AMPs participated in policy meetings on a hospital or hospital department level (36.7% and 43.3%, respectively), although almost two-thirds felt competent to do so (62.1% and 67.2%, respectively). Advanced practitioners working in peripheral hospitals [odds ratio (OR) 8.73, 95% confidence interval (CI) 1.35–56.42] and not feeling competent (OR 11.11, 95% CI 1.66–74.45) were less likely to participate in policy meetings on a hospital level. Non-participation in policy meetings on a hospital department level was only associated with APNs/AMPs not feeling competent to do so (OR 34.80, 95% CI 3.64–332.54). Less than 40% of participants extended and maintained contacts with international professional associations and patient organisations. Participation in national and international advisory boards was only performed by 23.3% and 10.0% of participants, respectively, despite 62.1% and 55.2% of APNs/AMPs feeling competent.

### 3.5. Change management and innovation

Table 3 shows that all change management- and innovation-related tasks were performed by more than 85% of the advanced practitioners, and at least 91.5% of participants felt competent doing so. However, feeling incompetent made initiating quality improvement strategies less likely (OR 27.00, 95% CI 2.41–302.19). Similar results were found for implementing quality improvement strategies (OR 41.32, 95% CI 3.03–563.21) and for evaluating them (OR 16.90, 95% CI 1.28–222.46). Advanced practitioners who were at least partly funded by a physician were more likely not to actively contribute to the innovation of the APNs'/AMPs' care domain (OR 15.41, 95% CI 1.05–226.08).

Table 3. Leadership, change management/innovation, and research: results for self-reported competency, task performance, task non-execution, and for multivariate binary logistic regression analysis for task non-execution[†]

| | | | | Independent variables | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Task (dependent variable)** | **Competent** | **Do** | **Do not** | **Type of healthcare setting[a]** | **Position appointment percentage[b]** | **Number of years of APN/AMP[γ] experience[c]** | **Competence perception level[d]** | **Financing source[e]** | **Type of hierarchical supervisor[f]** |
| | **N (%)** | **N (%)** | **N (%)** | **Odds ratio** | **Odds ratio** | **Odds ratio** | **Odds ratio** | **Odds ratio** | **Odds ratio** |
| **Clinical and professional leadership** | | | | | | | | | |
| Participate in a policy meeting at the hospital level as an advisor (linked or not linked to the domain of specialization) | 36 (62.1) | 22 (36.7) | 38 (63.3) | 8.73* | NA[¶] | 1.57 | 11.11* | 2.52 | 4.98 |
| Participate in a policy meeting at departmental / ward level as an advisor (linked or not linked to the domain of specialization) | 39 (67.2) | 26 (43.3) | 34 (56.7) | 2.33 | NA | 2.66 | 34.80* | NA | 3.60 |
| Participate in a policy meeting as an advisor linked to the domain of specialization and advise your supervisors on care related aspects | 50 (86.2) | 49 (81.7) | 11 (18.3) | NA | NA | NA | 9.44* | 4.18 | 2.91 |
| Develop domain-specific guidelines / protocols | 58 (98.3) | 57 (95.0) | 3 (5.0) | NA | NA | NA | NA | 0.06* | NA |
| Develop quality criteria and/or actively participate in quality systems | 48 (82.8) | 38 (63.3) | 22 (36.7) | 0.34 | NA | 4.45* | 2.79 | NA | NA |
| Extend and maintain relevant contacts with APNs/AMPs and co-workers in other hospitals | 52 (89.7) | 51 (85.0) | 9 (15.0) | NA | NA | NC[§] | 67.50* | NA | NA |
| Extend and maintain relevant contacts with home care organizations | 42 (71.2) | 29 (48.3) | 31 (51.7) | NA | NA | NA | 4.14* | 3.00 | 3.11 |
| Actively participate in governmental working groups | 43 (74.1) | 20 (33.3) | 40 (66.7) | NA | 2.80 | 2.41 | NA | NA | NA |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Extend and maintain relevant contacts with and actively participate in national professional associations | 47 (81.0) | 39 (66.1) | 20 (33.9) | 1.01 | NA | 1.34 | 18.49* | NA | 3.93 |
| Extend and maintain relevant contacts and actively participate in international professional associations | 41 (70.7) | 20 (33.3) | 40 (66.7) | NA | NA | NA | 0.17* | NA | NA |
| Participate in national advisory councils | 36 (62.1) | 14 (23.3) | 46 (76.7) | NA | NA | 1.95 | 8.14 | NA | 2.57 |
| Participate in international advisory councils | 32 (55.2) | 6 (10.0) | 54 (90.0) | NA | NA | NA | 0.22 | NA | NA |
| Extend and maintain relevant contacts with university colleges | 48 (81.4) | 41 (68.3) | 19 (31.7) | NA | 1.74 | NA | 48.72* | NA | NA |
| Extend and maintain relevant contacts with universities | 48 (82.8) | 37 (61.7) | 23 (38.3) | NA | NA | 1.19 | 25.45* | NA | NA |
| Extend and maintain relevant contacts with patients' associations | 41 (70.7) | 23 (38.3) | 37 (61.7) | NA | 4.75* | 2.31 | NA | NA | 3.15 |
| Participate in external education programs (e.g. teach in bachelor or master programs) | 51 (86.4) | 43 (71.7) | 17 (28.3) | 13.01* | NA | 2.40 | 11.06 | NA | NA |
| Care-related consultancy at the request of external organizations (e.g. expertise-related participation in a working group in another hospital) | 46 (79.3) | 23 (38.3) | 37 (61.7) | NA | NA | 0.33* | NA | NA | NA |
| **Change management and innovation** | | | | | | | | | |
| Detect and analyze gaps / bottlenecks in domain-specific care | 55 (91.7) | 53 (88.3) | 7 (11.7) | NA[¶] | NA | NA | 6.50 | 3.03 | NA |
| Initiate / design quality improvement strategies | 56 (93.3) | 56 (93.3) | 4 (6.7) | NA | NA | NA | 27.00* | NA | NA |
| Implement quality improvement strategies / testing care innovations | 54 (91.5) | 52 (86.7) | 8 (13.3) | NA | NA | NC[§] | 41.32* | NA | 6.39 |
| Evaluate and monitor quality improvement strategies | 55 (93.2) | 52 (86.7) | 8 (13.3) | 0.17 | NA | NA | 16.90* | NA | NA |
| Actively contribute to domain-specific care innovation on the basis of substantive expertise | 57 (95.0) | 57 (95.0) | 3 (5.0) | NA | NA | NA | 11.31 | 15.41* | NA |
| **Research** | | | | | | | | | |
| Initiation of domain-specific nursing / midwifery research | 55 (93.2) | 42 (68.9) | 19 (31.1) | NA | NA | NA | 5.93 | NA | 4.52* |
| Write research proposals for the acquirement of external / internal scientific research funds | 36 (61.0) | 21 (34.4) | 40 (65.6) | 2.10 | NA | 2.80 | 24.70* | NA | NA |
| Conduct / assist in domain-specific nursing / midwifery research | 56 (93.3) | 48 (78.7) | 13 (21.3) | 4.39* | NA | NA | NA | NA | 2.23 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Conduct / assist in multidisciplinary scientific research | 52 (88.1) | 39 (65.0) | 21 (35.0) | 3.11 | NA | 5.64* | 26.91* | NA | NA |
| Conduct / assist in clinical scientific research (e.g. medication trials) | 39 (66.1) | 25 (41.0) | 36 (59.0) | NA | 2.20 | NA | NA | 0.49 | NA |
| Read and critically appraise (inter)national scientific literature to substantiate the evidence basis for the own practice | 58 (100) | 53 (88.3) | 7 (11.7) | NA | NA | NA | NC | NA | NA |
| Summarize a large amount of scientific literature (e.g. for a literature review) | 52 (89.7) | 32 (53.3) | 28 (46.7) | NA | NA | NA | 0.15 | NA | NA |
| Translate scientific literature into practice | 56 (94.9) | 48 (80.0) | 12 (20.0) | NA | 0.37 | NA | 10.64 | 2.01 | NA |
| Disseminate scientific literature / knowledge to co-workers and in the organization in a targeted manner | 53 (91.4) | 49 (81.7) | 11 (18.3) | NA | 0.00 | NA | NC | NA | NA |
| Guide master students in the context of their education (e.g. master thesis) | 48 (84.2) | 44 (73.3) | 16 (26.7) | 11.63* | NA | 2.90 | 80.91* | NA | NA |
| Guide bachelor students in the context of their education (e.g. bachelor thesis) | 53 (96.4) | 45 (81.8) | 10 (18.2) | NA | NA | NA | NA | NA | NA |
| Publish (own) research results in international, peer-reviewed journals | 34 (58.6) | 18 (30.5) | 41 (69.5) | 2.61 | NA | 7.15* | 2.93 | NA | NA |
| Publish (own) research results in other journals | 38 (65.5) | 23 (38.3) | 37 (61.7) | 8.27* | NA | 8.94* | 11.46* | NA | 1.15 |
| Present (own) research results (e.g. at a congress, symposia) | 45 (76.3) | 33 (55.0) | 27 (45.0) | 19.97* | NA | 11.30* | 30.26* | NA | NA |

[†]The first authors translated the instrument from Dutch into English for publication purposes only. No validation of the translation was performed.

[†]APN: advanced practice nurse; AMP: advanced midwife practitioner

Reference categories: [(a)] working in a peripheral hospital; [(b)] position appointment percentage ≤ 50%; [(c)] number of years of work experience as an advanced practitioner ≤ 5 years; [(d)] feeling incompetent for task execution; [(e)] financing source is a doctor or medical head of department; [(f)] a doctor or medical head of department is (one of the) hierarchical supervisor(s) of the APN/AMP.

[¶]NA (not applicable) due to $p \geq 0.25$ for independent variable in univariate logistic regression analysis.

[§]NC (not calculated) due to the low frequency of the independent variable.

*$p < 0.05$; **$p < 0.001$

### 3.6. Research

Table 3 illustrates that advanced practitioners mainly used their research skills to read and review the literature (88.3%), to translate the findings into evidence-based practice (80.0%), to purposefully disseminate the literature to professionals in the health care organisation (81.7%) and to guide bachelor (81.7%) and master (73.3%) students. Over two-thirds of APNs/AMPs initiated (68.9%) and cooperated (78.7%) in nursing/ midwifery research in their domain of specialization. Advanced practitioners not initiating research were more likely to have a physician as a hierarchical supervisor (OR 4.52, 95% CI 1.31–15.63), while participants not cooperating in domain-specific research were more likely to work in peripheral hospitals (OR 4.39, 95% CI 1.18–16.34). A minority wrote research proposals (34.4%). The odds of not writing a research proposal were higher when feeling incompetent (OR 24.70, 95% CI 1.31–15.63). Tasks related to the dissemination of research results were performed less frequently. A minority of participants published in international, peer-reviewed journals (30.5%) or in other journals (38.3%). Just over half of the APNs/AMPs presented research results during conferences or symposia (55.0%). Presenting research results was less likely for participants working in peripheral hospitals (OR 19.97, 95% CI 3.03–131.81), having 5 years or less of APN/AMP experience (OR 11.30, 95% CI 1.53–83.34), and feeling incompetent for it (OR 30.26, 95% CI 2.29–400.47). Similarly, not publishing in other journals was associated with working in a peripheral hospital (OR 8.27, 95% CI 1.29–53.11), having limited APN/AMP experience (OR 8.94, 95% CI 1.85–43.27) and feeling incompetent to do so (OR 11.46, 95% CI 1.66–79.21).

## 4. Discussion

This study examined the task performance and competency level of APNs/AMPs, and factors associated with task non-execution. Advanced practitioners in hospitals in Flanders were relatively young and had limited APN/AMP experience. Moreover, 43.1% of APNs had no work experience in the specialization for which they became an advanced practitioner.

Results showed that participants executed tasks in all advanced practice domains as defined by Hamric et al. (2013). They devoted the largest part of their time to direct patient contacts, which is consistent with clinical work accounting for the largest part of advanced practitioners' activities in other studies (Martin-Misener et al., 2015; Norton, Sigsworth, Heywood, & Oke, 2012). On a domain level, only a limited number of factors were associated with task non-execution. This could indicate that factors not examined in this study influenced APNs'/AMPs' task execution. Figure 2 shows a non-exhaustive overview of factors having an impact on task execution as described in the literature. This preliminary model was based on the frameworks for APN/AMP role development and role enactment by De Geest et al. (2008) and Elliott et al. (2016), and supplemented with factors examined in our study. Results of future studies could further refine the model. As many of the studies included by Elliott et al. (2016) used qualitative research methods, quantitative research methods could quantify factors influencing task execution. Such results could inform the targeted deployment of interventions. Despite

the limited number of factors associated with task non-execution on a domain level, several associations were found on the level of individual activities. Several tasks were executed by few participants despite many feeling competent. The underuse of advanced practitioners' competencies could be a missed opportunity and lead to competency level deterioration and a reduction of care quality improvement. On a people management level, APNs/ AMPs feeling competent for tasks they may or cannot perform could lead to job dissatisfaction and leaving the profession (Lamb et al., 2018). One of the main reasons for clinical nurse specialists to not work in the role is the inability to implement all its dimensions (Kilpatrick et al., 2014). It therefore seems vital that advanced practitioners' supervisors and collaborating professions purposefully stimulate APNs and AMPs to maximize task performance in all advanced practice domains. However, special attention should be given to the leadership domain, as five of the ten tasks performed by fewest participants belong to this domain. Building leadership capacity should be a priority in health care to meet current and future challenges due to economic constraints, shifting population demographics and increasing numbers of chronically ill patients (Lamb et al., 2018). Nonetheless, several barriers for leadership enactment of advanced practitioners have been identified (Elliott et al., 2016), such as organisation-level gaps in leadership development, the absence of leadership capacity building strategies and heavy clinical workload reducing advanced practitioners' time for leadership activities (Elliott, 2017). According to Elliott (2017), the following factors facilitate leadership enactment by advanced practitioners within and beyond their health care organisation: a defined leadership role, accountability for achieving their performance targets and reporting to the organisation's director, leadership mentoring availability, membership of strategic committees, networking opportunities, formal links between the health care organisation and universities, and administrative support. First and foremost however, health care organisations should commit long term to leadership capacity building by making it one of the priorities within the organisation's strategic plan (Elliott, 2017).

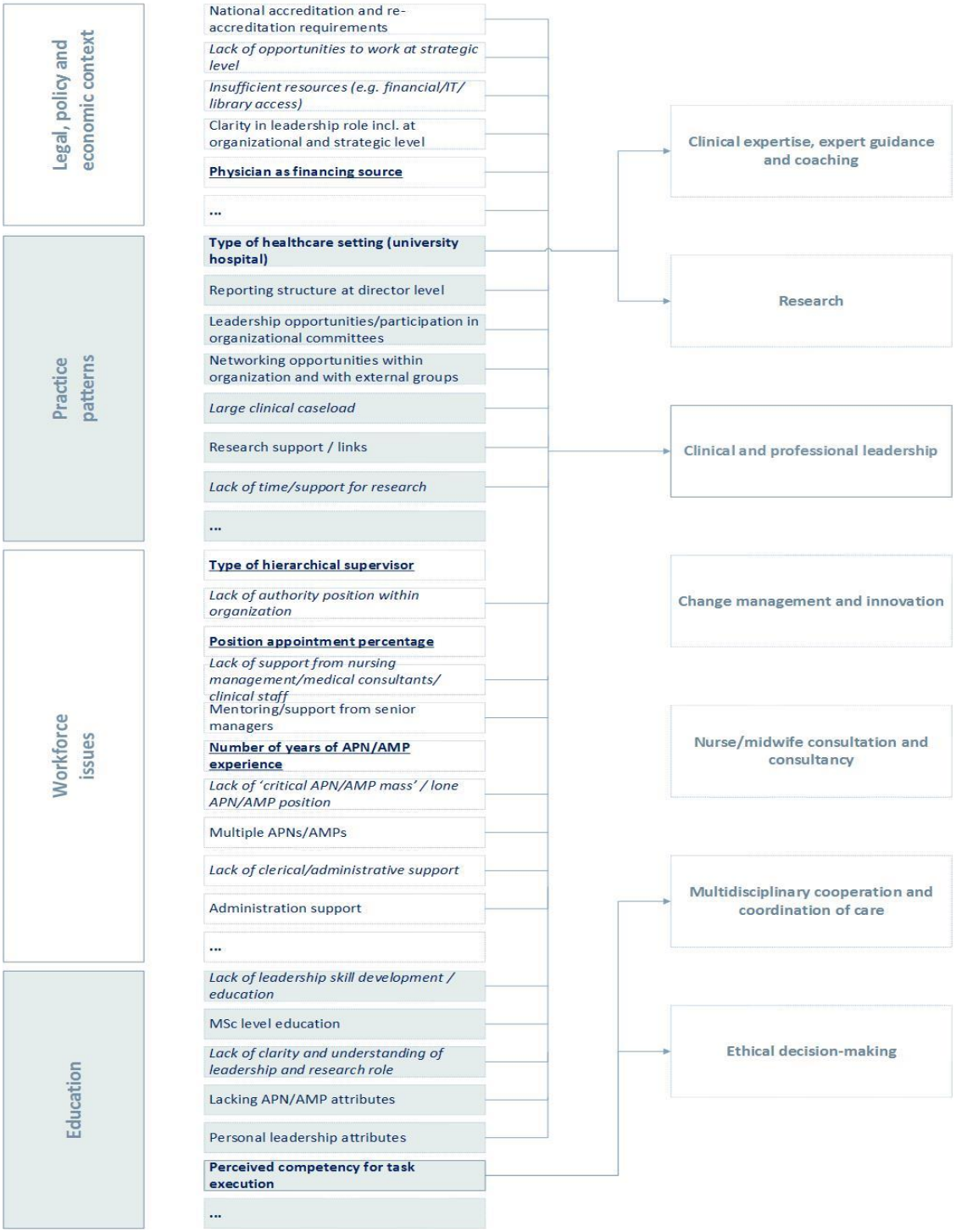


Figure 2. Factors influencing APN/AMP task performance. Unmarked factors are factors described in the literature as facilitators for APN/AMP task performance; factors marked in italic are barriers for APN/AMP task performance as described in the literature; factors marked in bold print are those examined in the current study; factors with no effect on APN/AMP task performance in the current study are marked in bold print and underlined

In addition to leadership capacity building, increasing leadership capability seems equally important, as our results showed that the non-execution of several tasks in the leadership domain was associated with APNs/AMPs not feeling competent. Pre-service and tailored in-service training, for example, leadership development programmes for advanced practitioners, could provide APNs/AMPs with the capabilities and confidence needed to enact their clinical and professional leadership role. Similarly, tasks in the domains of "research" and "innovation and change management" were associated with task non-execution due to ANPs/AMPs not feeling competent. However, results showed that advanced practitioners who were at least partly funded by a physician were less likely to actively contribute to the innovation of APNs'/AMPs' care domains. Having a physician as a hierarchical supervisor also made it less likely to initiate domain-specific nursing or midwifery research. As the non-execution of some tasks was related to ANPs/AMPs being at least partly funded or supervised by a physician, it is vital that ANPs/AMPs and their non-medical supervisors are aware of these associations in order to secure the nursing/midwifery focus of the advanced practitioners' task performance. Moreover, both leadership, innovation and research are specifically important domains for advanced practitioners as advancement is essential on a health care organisational, national and international level. The competencies in these domains are crucial for the implementation of evidence-based practice and innovations in patient care, and for the further professionalization of nursing and midwifery policy and science.

### 4.1. Study limitations

The following study limitations need to be considered. Firstly, not all general hospitals could be reached to inventory APNs/AMPs. Secondly, the telephone calls to members of the hospital management revealed that they did not always know which nurses or midwives met the inclusion criteria. Therefore, potential participants could have been missed. Thirdly, we did not perform sample size calculations. As formal regulation for the registration and certification of APNs and AMPs was not in place and the "advanced practitioner" job title was not protected in Belgium, there was no information on the number of nurses and midwives in an advanced practice role. All peripheral and university hospitals in Flanders were contacted to inventory nurses and midwives that met the inclusion criteria. As only 79 APNs and 8 AMPs were identified, all were invited to participate in the study. As 58 APNs and 5 AMPs completed the questionnaire, results are valid for the Belgian health care context. Caution is required regarding the external validity of the study in an international context due to the limited sample size. However, the strength of this study lies in the fact that data about APNs'/AMPs' activities and competencies are available from a country where advanced practice is emerging. Such data are scarce, as most data in the literature come from countries in which advanced practice nursing is well established. Fourthly, there was no identification of non-responders. Hence, potential differences in task execution and level of competency between responders and non-responders could not be determined. In addition, more questionnaires were returned than links to the questionnaire were

sent. As the survey was executed during a period of national discussion about APN roles, it is possible that not-master educated, specialized nurses wanted to increase the visibility of their roles. The link to the electronic version of the questionnaire could also have been forwarded easily. Therefore, all participants were carefully checked for meeting the inclusion criteria before data analysis. Fifthly, a threat to validity could exist as both task execution and competency level were self-reported measures. Sixthly, 38.1% of APNs/AMPs held another position simultaneously with the advanced practitioner position. This could have led to an overestimation regarding the execution of tasks, as tasks might have been performed in another professional context than in the APN/ AMP role. Seventhly, we did not use a comprehensive framework to examine the variables associated with task non-execution, given the exploratory nature of the study. Potential overfitting in the logistic regression models should also be taken into account due to the sample size. The authors are aware of a 30% chance for at least one false-positive result by executing seven multivariate binary logistic regression analyses on the task non-execution rates for each domain separately. Finally, anonymous participation and the lack of an identifier for the health care organisation in the digital and paper-based questionnaires impeded information on the distribution of participants per institution. Hence, adjustment of the logistic models for the hospital cluster effect could not be executed as only data on the type of health care setting were collected.

## 5. Conclusion

As this study examined activities and competencies of APNs/AMPs, and factors associated with task non-execution, results added to the limited international knowledge thereon. In addition, Belgium is a country with emerging but not yet fully established APN/AMP roles. The study thus contributed to the comparison of advanced practice roles internationally.

Results showed that APNs/AMPs in hospitals in Flanders practiced according to all advanced practice domains. As many APNs/AMPs were rather young and had limited advanced practitioner experience, their supervisors could play an important part in enhancing APNs'/AMPs' role development and expertise. Several tasks were executed by few participants despite many feeling competent. It therefore seems appropriate to examine barriers hindering APNs/AMPs in reaching their full potential. Providing APNs/AMPs with the opportunities for professional development might prevent job dissatisfaction and advanced practitioners leaving the profession. However, further research gaining in-depth knowledge on factors and circumstances that influence task execution beyond the factors in this study, particularly related to clinical and professional leadership activities, could provide valuable insights. More profound research on underlying reasons for APNs/AMPs not feeling competent for task execution also seems important as this could equip APN/AMP supervisors with valuable guidance in providing tailored in-service programmes. The results could also provide curriculum developers of advanced practitioner courses with information on potential programme changes in order to educate competent and confident APNs/AMPs taking responsibility for their full scope of practice. This is particularly important in the domains of leadership,

innovation and research as to safeguard the advancement of nursing and midwifery as a profession and science. Finally, as this study examined tasks and competencies of APNs/AMPs working in a hospital setting, future research could focus on the task performance, competencies and factors associated with task non-execution regarding APNs/AMPs working in primary and mental health care.

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## CHAPTER 5

# Time use of advanced practice nurses in hospitals: A cross-sectional study

Based on the article published in

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## ABSTRACT

**Aims:** To examine the use of time by advanced practice nurses and time use differences according to type of healthcare organisation, work experience, and supervisor. Design: A cross-sectional, observational study.

**Methods:** Non-participant observations were executed in Belgium (October 2015–January 2016). Time use was categorised in domains (patient/family, team, healthcare organisation) and roles (clinical expert, educator/coach, change agent/innovator, researcher, leader, collaborator, and ethical decision-making facilitator). Proportional working time in domains and roles was calculated. Chi-squared tests identified differences in time use according to type of healthcare organisation, number of years of work experience, and type of hierarchical/functional supervisor.

**Results:** Participants mainly devoted time to the patient/family domain (30.78%) and the clinical expert role (34.19%). The role of leader and ethical decision-making facilitator covered, respectively, 4.84% and 0.07% of participants' time. Time distribution in domains and roles differed between participants in university and peripheral hospitals.

**Conclusion:** Activities were executed in all domains and roles, except for the ethical decision-making facilitator role. Further research could uncover barriers and facilitators for role execution, especially about leadership and ethical decision-making.

**Impact:** Advanced practice nurses, supervisors and policymakers could act to optimize advanced practice nurses' scope of practice.

# 1. Introduction

The International Council of Nursing defines an advanced practice nurse (APN) as "a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which she/he is credentialed to practice. A master level degree is recommended for entry level" (Schober & Affara, 2006). Most common advanced practice nursing positions are the Clinical Nurse Specialist (CNS) and the Nurse Practitioner (NP; Dowling, Beauchesne, Farrelly, & Murphy, 2013; Hamric, Hanson, Tracy, & O'Grady, 2013).

The role of APN was first introduced in the United States in the 20th century, from where it has been implemented in country-specific healthcare contexts around the world (Oddsdóttir & Sveinsdottir, 2011). Due to the increasing number of countries where advanced practice nursing roles have been implemented over the past decades (Maier, Barnes, Aiken, & Busse, 2016), confusion has arisen about APNs' titles, roles, and scope of practice internationally (Carryer, Wilkinson, Towers, & Gardner, 2018). Clarification of the content of advanced practice and advanced practice nursing roles has been attempted through concept analyses (Dowling et al., 2013; Ruel & Motyka, 2009) and examinations of APNs' practice profile (Gardner, Duffield, Doubrovsky, & Adams, 2016; Sevilla Guerra, Salmerón, & Zabalegui, 2018). In addition, several advanced practice nursing models have been developed as the conceptualization and a common language for advanced practice nursing has been deemed fundamental (Hamric et al., 2013). One of the earliest and frequently referenced models is Hamric's model, where primary criteria for advanced practice nursing and a set of core competencies are defined: direct clinical practice, collaboration, guidance and coaching, evidence-based practice, ethical decision-making, consultation, and leadership (Hamric et al., 2013). Although the focus in the advanced practice literature has in recent years shifted towards APNs' leadership capability (Elliott, Begley, Sheaf, & Higgins, 2016; Gaylord & Grace, 2014; Lamb, Martin-Misener, Bryant-Lukosius, & Latimer, 2018) and their impact on a clinical, professional, and organisational healthcare level (Begley, Murphy, Higgins, & Cooney, 2014; Gerrish et al., 2011; Litchman, Schlepko, Rowley, McFarland, & Fiander, 2018; Wong, Cummings, & Ducharme, 2013; Woo, Lee, & Tam, 2017), publications on these topics remain scarce.

## 1.1. Background

As in many countries, advanced practice nursing roles have been implemented in Belgium (Belgian Federal Public Service Health Food Chain Safety and Environment, 2016; Van Holsbeke et al., 2011). The unofficial introduction of these roles was situated in the mid-2000s, was facilitated by the implementation of academic master's programmes for nurses in the 1980s (De Geest et al., 2008), and has mainly taken place in hospital settings. A formal system or regulatory body for the registration and certification of APNs has not been established. Thus far, the 'advanced practitioner' job title is not

protected nor officially regulated in Belgium. As the future legal regulation and formal recognition of advanced practice nursing roles in Belgium are currently being discussed, knowledge and understanding are required about the extent to which APNs practice in all advanced practice nursing roles as defined by Hamric et al. (2013). Although APNs in Belgium are generally referred to as CNSs, their task performance and time use are currently unclear. This information is important to support a legitimate debate about job differentiation and task reallocation in health care, to provide a basis for accurate job descriptions and for the development of a national professional profile for APNs, advanced practice nursing curricula, and certification requirements (Sastre-Fullana et al., 2017).

Several studies have examined the professional time use of CNSs (Darmody, 2005, 2011; Kilpatrick et al., 2013; Leary et al., 2008; Mayo et al., 2010; Norton, Sigsworth, Heywood, & Oke, 2012; Oddsdóttir & Sveinsdottir, 2011; Ream et al., 2009; Wickham, 2011), NPs (Johnson, Brennan, Musil, & Fitzpatrick, 2016; Kleinpell & Goolsby, 2012; Martin-Misener et al., 2015; Rosenfeld, McEvoy, & Glassman, 2003; Woo, Zhou, Lim, & Tam, 2019), or both (Becker, Kaplow, Muenzen, & Hartigan, 2006; Lincoln, 2000). These studies investigated the time investment of APNs using self-reporting methods, such as diaries (Ream et al., 2009; Norton et al., 2012; Oddsdóttir & Sveinsdottir, 2011), instruments to register the frequency of activities (Becker et al., 2006; Leary et al., 2008; Martin-Misener et al., 2015; Wickham, 2011), or the estimated proportion of time spent on APN roles (Darmody, 2011; Johnson et al., 2016; Kilpatrick et al., 2013; Kleinpell et al., 2012; Lincoln, 2000; Mayo et al., 2010; Rosenfeld et al., 2003; Wickham, 2011; Woo et al., 2019). However, recurring limitations in these studies are as follows: no random selection of the sample, unclear inclusion criteria, a lack of reasons explaining attrition, and a risk of self-reporting bias. Only the descriptive pilot study of Darmody (2005) used direct, non-participant observations and time study to record activities and time for a total of 20 h of observation of five CNSs in acute care in one academic medical centre in the United States. To the best of the authors' knowledge, no studies have been executed in Belgium or internationally to examine the detailed time use of APNs using non-participant observations of a randomly selected and larger sample of APNs with diverse areas of specialization in both academic and non-academic hospitals. In addition, only one previous study (Oddsdóttir & Sveinsdottir, 2011) used a framework that explicitly categorised activities in advanced practice nursing roles, domains, and categories. Furthermore, studies examining differences in APNs' time use according to type of healthcare organisation, number of years of work experience, type of hierarchical supervisor, and type of functional supervisor are lacking. The type of healthcare organisation could potentially influence APNs' time use, as university and peripheral hospitals provide a different context for care provision in Belgium. University hospitals provide the care of peripheral hospitals, but their mission statement additionally includes expert care provision in complex care situations, care innovation and development, clinical training for students and specialists, and research (Royal Decree of 2004 June, 2004). Information about potential differences in APNs' time use according to type of healthcare organisation could substantiate

more specific measures allowing APNs to reach their full potential in both university and peripheral hospitals. Participants' time use might also be influenced by their number of years of work experience or by the type of supervisor (nursing vs. medical management), as these factors are found in the literature as either barriers or enablers of APNs' role enactment, development, and implementation (Begley et al., 2014; Elliott et al., 2016; Fealy et al., 2015; Franks, 2014; Mullen, Gavin-Daley, Kilgannon, & Swift, 2011; Woodward, Webb, & Prowse, 2005). However, the impact of these factors on APNs' time use remains unclear.

The results of this study could add to the creation of a comprehensive categorisation framework, the clarification of the time use and job content of APNs in Belgium, and the comparison of advanced practice roles internationally and insight into factors associated with differences in APNs' time use.

## 2. The study

### 2.1. Aims

The primary objective of the study was to examine the time use of APNs in hospitals in Flanders (Belgium), with regard to the advanced practice nursing roles as defined by Hamric et al. (2013) and the domains of the patient and family, the team, and the healthcare organisation. Secondarily, differences in APNs' time use were examined according to type of healthcare organisation, number of years of work experience, type of hierarchical supervisor, and type of functional supervisor.

### 2.2. Design

A cross-sectional time and motion study using structured, non-participant observations was executed. This observational method was chosen because an observer can document all of the activities undertaken in a given timeframe in the natural setting of the APN by recording the time required by the APN to perform a task. In contrast to participant observation, observers do not take part in the setting in non-participant observation. Researchers take a more distant role and use a 'fly on the wall approach' (Holloway & Galvin, 2017). Non-participant observation generates detailed information, improves the continuous and accurate registration of activities and time (Darmody, 2005), and eliminates self-reporting bias (Polit & Beck, 2017).

## 2.3. Participants

An inventory of hospital-based APNs was available from a previous study (Van Hecke et al., 2019), for which all APNs in Flanders (Belgium) were identified. This was done by contacting a member of the nursing management of all university and peripheral hospitals in Flanders (n = 66) as listed by the Federal Public Service Health, Food Chain Safety and Environment. Advanced practitioners in primary care, mental health care, and rehabilitation were excluded from the existing inventory, as they were not eligible for participation in our study. APNs were eligible for study participation if they met all of the following criteria: (a) work in direct patient care; (b) hold minimum a master's degree in a health-related discipline; (c) serve in at least one of the following advanced practice roles as defined by Hamric et al. (2013) beside the clinical expert role: educator and coach, change agent and innovator, researcher, clinical and professional leader, consultant, or facilitator of ethical decision-making; (d) be mandated from hospital management to work as APN; (e) have an APN position appointment percentage of minimum 50%; and (f) have a minimum of 6 months of APN experience. As different terminology for APNs across hospitals was used due to the lack of advanced practice nursing regulation and legislation in Belgium, the official use of an APN job title was not an inclusion criterion. As shown in Figure 1 illustrating the participant selection process, a sample of 67 APNs employed in 17 hospitals was used for the stratified random sampling in our study. Simple random sampling, stratified for type of hospital (university vs. peripheral hospital), was performed using a sampling frame, where each APN was given a number. Thereafter, the numbers of all APNs in university hospitals and all APNs in peripheral hospitals were put in two separate bowls. A random sample of 40 APNs was taken, whereby one of the researchers randomly took an equal number of APNs (20 persons) out of each bowl. The remaining numbers of 27 APNs were taken and randomized in a backup list. In case of APNs dropping out, the next APN on the backup list was contacted. The APNs were contacted by e-mail. Each participant received information about the study and a proposed date for observation. A random date was assigned to every APN. If this date was not suitable (e.g. if the APN was not working as APN on the proposed date due to conference attendance or illness, or holiday), another date was suggested.

## 2.4. Data collection

Structured, non-participant observation was used to collect data over a 4-month period (October 2015–January 2016). Two observers were involved in the observations. Each APN was observed over 1 day. Both the type of the observed activities and the duration were recorded with a 1-min accuracy. The observers used a stopwatch and systematically recorded the tasks of the APN in a semi-structured diary as shown in Addendum 2. Similar diaries were used in the study by Darmody (2005).

At the start of the observation, APNs were asked to carry out their professional tasks as if the observer was not present. When the participant had some indirect patient-related contacts (tasks performed for the benefit of the patient but not necessarily in the presence of the patient, e.g. e-mails, telephone calls, and administration), the observers first tried to understand the activity by deducing information from the situation. If the observers were not sure about the interpretation, they asked the APN to clarify the activity. When a clarification lasted longer than 1 min, the time was registered as bias time, that is, time the APN would have spent differently if the observer was not present.

## 2.5. Variables and measures

### *Sociodemographic variables*

Table 1 shows the sociodemographic variables that were collected using a questionnaire during the observation or the day after. To examine differences in time use, information was collected on the type of healthcare organisation (university vs. peripheral hospital), the number of years of work experience (5 years or less of APN experience vs. more than 5 years of APN experience), type of hierarchical supervisor ([partial] supervision by a doctor or medical head of department vs. nursing supervision), and type of functional supervisor ([partial] supervision by a doctor or medical head of department vs. nursing or no supervision).

### *Categorisation in a framework*

All observed activities were categorised in a framework that distinguished three domains and seven roles of APNs. The structure of the framework was based on frameworks used in previous studies (Darmody, 2005; Oddsdóttir & Sveinsdottir, 2011). As shown in Appendix S2, the framework was divided into three columns representing the following domains: (a) patient and family, referring to the APNs' direct and indirect contact with the patient and his family; (b) the team, referring to the position of the APN in a multidisciplinary team and the input in a specific hospital department or ward; and (c) the healthcare organisation, referring to the contribution of the APN in hospital policy, specific care teams, and (inter)national networks. The different rows of the framework contained the APN roles as defined by Hamric et al. (2013) and as described above. An additional category 'other activities' was added and referred to technical activities such as travelling inside the hospital (e.g. to attend meetings) and (coffee or lunch) breaks.

In this study, patient consultation/consultancy was categorised under the role of clinical expert in the domain of patient and family (e.g. nurse-led consultations or bedside APN consultations). If the focus of the interaction was on the team or the healthcare organisation, the appointed category depended on the situation (e.g. if the APN was consulted for the implementation of a hospital-wide quality improvement project, the task was categorised under the role of change agent).

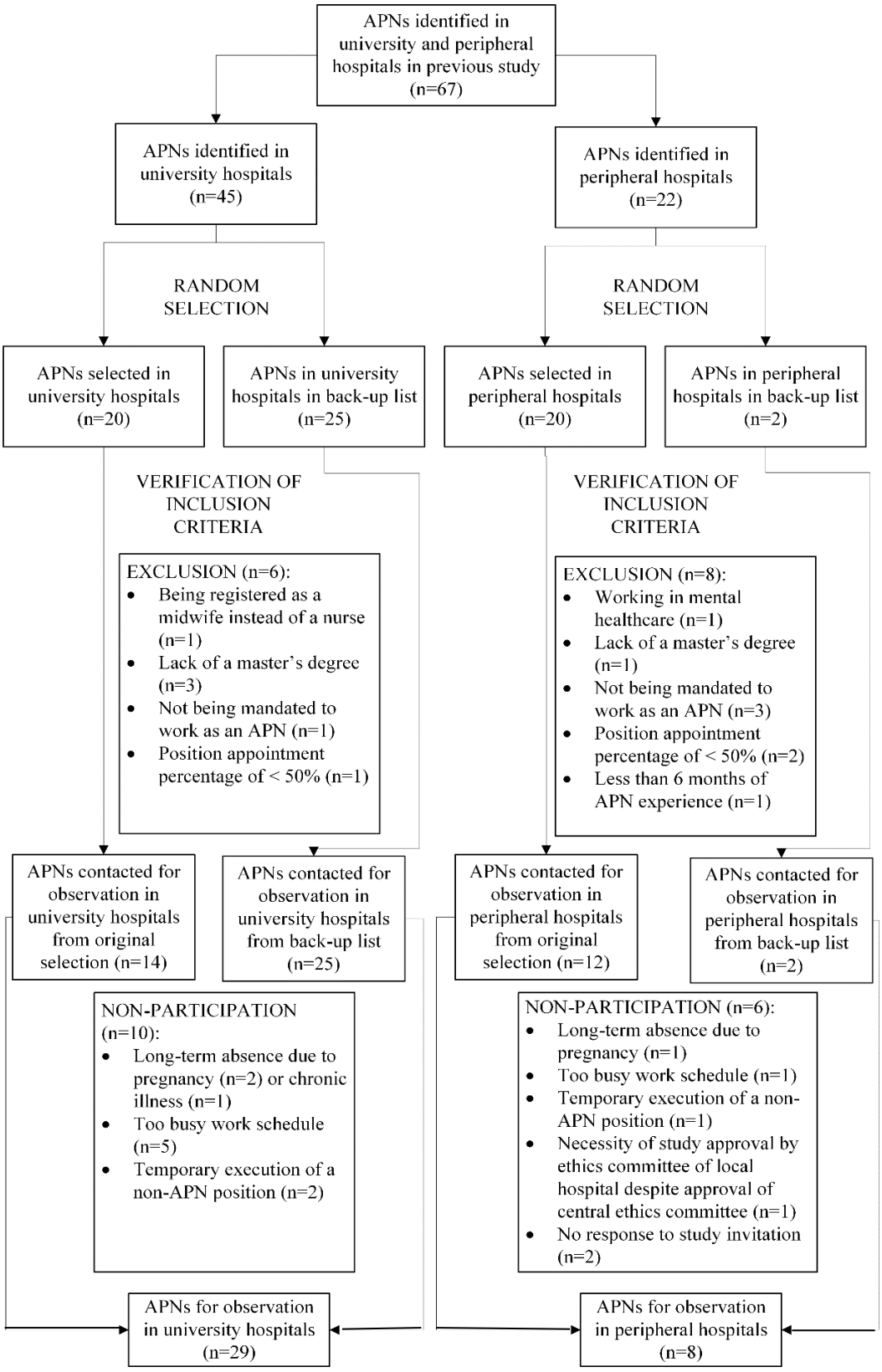


Figure 1 Flowchart participant selection

## 2.6. Ethical considerations

Approval was obtained by the Research Ethics Committee of Ghent University Hospital (Belgium; B670201525213). To guarantee anonymity, personal data and observations of the APNs were coded. An informed consent was signed by all participants. For APN activities that were observed in the presence of patients, the patients were informed about the observation and agreed to being observed before the start of the observation.

## 2.7. Data analysis

*Counting of minutes analysis*

The Statistical Package for the Social Sciences (SPSS version 24, IBM Analytics) was used to calculate the total number of hours and minutes of the different activities of APNs for each domain and role. Furthermore, the time devoted to the different domains, roles, and other activities was standardized by calculating the proportional working time (i.e. the percentage of time during a work day) spent on the domains, roles, and other activities. This relative measure takes into account that some participants were observed for a longer period of time due to longer work days than others. Chi-squared test was conducted to study the association between the categorical predictors type of healthcare organisation, the number of years of work experience, type of hierarchical supervisor, and type of functional supervisor and the distribution of time spent on (1) the domains and other activities and (2) the roles and other activities.

Table 1. Demographic characteristics of the participants (n=37)

| Characteristics | n | % |
|---|---|---|
| Age | | |
| 23-30 years | 5 | 13.5 |
| 31-40 years | 18 | 48.7 |
| 41-50 years | 11 | 29.7 |
| >50 years | 3 | 8.1 |
| Gender | | |
| female | 32 | 86.5 |
| male | 5 | 13.5 |
| Education | | |
| Master of Science in Nursing and Midwifery | 27 | 73.0 |
| Master of Science in Health Education and Health Promotion | 4 | 10.8 |
| Master of Science in Healthcare Management and Policy | 3 | 8.1 |
| Master in Care Sciences | 1 | 2.7 |
| Master in Advanced Nursing Practice | 1 | 2.7 |
| PhD | 1 | 2.7 |
| Type of healthcare organization | | |
| University hospital | 29 | 78.4 |
| Peripheral hospital | 8 | 21.6 |
| Number of hospital beds | | |
| 200-299 | 2 | 5.4 |
| ≥450 | 35 | 94.6 |
| Position appointment percentage | | |
| 50 - 60% | 9 | 24.3 |
| 70 - 80% | 5 | 13.5 |
| 90 - 100% | 23 | 62.2 |

| | | |
|---|---|---|
| APN[†] simultaneously having another position (combined positions) | | |
| No | 28 | 75.7 |
| Yes | 9 | 24.3 |
| APNs' nursing specialization[‡] | | |
| Oncology/Hematology | 7 | 18.9 |
| Pain | 6 | 16.2 |
| Wound care | 6 | 16.2 |
| Anesthesiology | 3 | 8.1 |
| Cardiology | 4 | 10.8 |
| Pediatric nursing | 2 | 5.4 |
| Nephrology/Urology | 2 | 5.4 |
| Catheter and port care | 2 | 5.4 |
| Surgery | 2 | 5.4 |
| Hemovigilance | 2 | 5.4 |
| Palliative care | 2 | 5.4 |
| Geriatrics | 2 | 5.4 |
| Organ transplant care | 2 | 5.4 |
| Number of years of work experience as an APN in the current specialization | | |
| 0 - 5 | 18 | 48.7 |
| 6 - 10 | 11 | 29.7 |
| 11 - 15 | 6 | 16.2 |
| 16 - 20 | 2 | 5.4 |
| Number of years of work experience in current specialization before becoming APN | | |
| < 5 | 22 | 59.5 |
| 5 - 9 | 8 | 21.6 |
| 10 - 14 | 4 | 10.8 |
| > 15 | 1 | 2.7 |
| Missing | 2 | 5.4 |

| | | |
|---|---|---|
| Financing source for the APN | | |
| Hospital | 27 | 73.0 |
| External financing | 3 | 8.1 |
| Hospital and external financing | 3 | 8.1 |
| Medical head of department/doctors | 2 | 5.4 |
| Other financing source | 2 | 5.4 |
| Hierarchical supervisor of the APN[§] | | |
| None | 0 | 0 |
| Chief nursing officer | 21 | 33.3 |
| Middle management | 37 | 58.7 |
| Head nurse/head midwife | 12 | 19.0 |
| Medical head of department | 12 | 19.0 |
| Doctor(s) | 16 | 25.4 |
| Functional supervisor of the APN[¶] | | |
| None | 3 | 4.8 |
| Chief nursing officer | 8 | 12.7 |
| Middle management | 21 | 33.3 |
| Head nurse/head midwife | 7 | 11.1 |
| Medical head of department | 19 | 30.2 |
| Doctor(s) | 33 | 52.4 |

[†]APN: advanced practice nurse

[†]An APN could indicate multiple domains of specialization simultaneously and register additional domains of specialization via the 'other' option. The following domains of specialization were registered only once or as the option 'other': orthopedics, neurology, and genetic counseling.

[§]An APN could indicate multiple hierarchical supervisors.

[¶]An APN could indicate multiple functional supervisors.

### 2.8. Validity, reliability, and rigour

*Inter-rater reliability of non-participant observations*

As two observers were involved in the non-participant observations [EL and SG], inter-rater reliability was assessed. The first two APNs were observed by both researchers simultaneously without the observers consulting each other during the observations. A Cohen's Kappa of 0.72 was obtained. The following agreements on observations were made: (a) travelling inside the hospital was registered as a separate activity and (b) a task taking less than 1 min was not registered separately. As a Cohen's Kappa of at least 0.70 was considered good (Landis & Koch, 1977; Rigby, 2000), observations of other APNs were executed by one observer only.

*Inter-rater reliability of categorisation into the framework*

At the beginning of the categorisation, 2 days of observation were categorised separately by three members of the research team and differences were discussed. The following agreements were added to increase the accuracy during the categorisation of activities: (a) when APNs performed two tasks simultaneously, only the task that was more inherent to the role of the APN was considered (e.g. when giving advice by telephone (clinical expert) while travelling inside the hospital (category 'other activities'), only the task of giving advice was categorised in the role of clinical expert); (b) when APNs were consulted by patients or healthcare professionals concerning patient care, this was considered as clinical practice. However, when APNs were consulted for skill acquisition of nurses, this activity was assigned to the role of educator and coach and (c) patient education was frequently intertwined with a consultation and was therefore considered under the role of clinical expert, while giving education to a group of patients was assigned to the role of educator and coach. To ensure further objectivity, all the registered activities were jointly categorised into the framework by both observers [EL and SG]. In case of any doubt, one of the co-authors [AVG] was consulted to achieve consensus.

## 3. Results

### 3.1. Sample characteristics

Figure 1 shows that the final sample consisted of 29 APNs working in university hospitals and 8 APNs working in peripheral hospitals. The sociodemographic characteristics of the sample (Table 1) illustrates that 86.5% of participants were women and that 78.4% were between 31–50 years old. Three-quarters of participants worked exclusively as APN; 48.7% had less than 6 years of APN experience and 59.5% had less than 5 years of work experience in the specialization before becoming an APN.

### 3.2. Time spent on activities in domains and roles and on other activities

Table 2 shows the results of the time spent by APNs in the three domains and seven advanced practice roles and on other activities. In total, the APNs worked 328 h 57 min during the study time and on average, each APN was observed for 8 h 53 min (min. 7 h 00 min, max. 12 h 14 min).

*Time spent on activities in domains*

Observations in the domain of the patient and family lasted for a total of 100 h 53 min, with an average per APN of 2 h 24 min per day. Participants used on average 30.78% of their total daily working time for the execution of activities in this domain. Hence, the patient and family domain is the domain on which APNs spent most of their daily working time.

Table 2. Total, mean (SD[1]) and proportional working time spent by APNs (n=37) in domains, roles and other activities, and results of Chi² analysis

| | Total (n=37) | Mean (n=37) | SD (n=37) | Range (n=37) | Mean proportion of total observation time (n=37) | Mean proportion of working time by type of healthcare organization | | | Mean proportion of working time by number of years of APN experience | | | Mean proportion of working time by type of hierarchical supervisor | | | Mean proportion of working time by type of functional supervisor | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | PH (n=8) | UH (n=29) | p¥ | ≤ 5 years (n=18) | > 5 years (n=19) | p¥ | Physician (n=18) | No physician (n=19) | p¥ | Physician (n=27) | No physician (n=10) | p¥ |
| | hours/ minutes | hours/ minutes | hours/ minutes | hours/ minutes | % | % | % | | % | % | | % | % | | % | % | |
| **Observation time** | 328h57' | 8h53' | 0h59' | 7h00' – 12h14' | | | | | | | | | | | | | |
| **Domains** | | | | | | | | | | | | | | | | | |
| Patient and family | | | | | | | | | | | | | | | | | |
| *Total* | 100h53' | 2h24' | 1h52' | 0h00' – 6h48' | 30.78 | 50.82 | 25.25 | | 31.28 | 30.30 | | 35.71 | 26.10 | | 34.30 | 21.26 | |
| *Direct patient related* | 61h11' | 1h39' | 1h29' | 0h00' – 5h42' | 18.37 | 27.86 | 15.75 | | 18.36 | 18.37 | | 19.07 | 17.70 | | 19.71 | 14.74 | |
| *Indirect patient related* | 39h42' | 1h04' | 0h52' | 0h00' – 3h33' | 12.41 | 22.96 | 9.50 | | 12.92 | 11.93 | | 16.64 | 8.40 | | 14.59 | 6.52 | |
| | | | | | | | | .001* | | | .790 | | | .423 | | | .200 |
| Team | 68h54' | 1h52' | 1h05' | 18' – 4h44' | 20.93 | 19.72 | 21.26 | | 18.12 | 23.59 | | 21.13 | 20.74 | | 19.77 | 24.06 | |
| Healthcare organization | 82h01' | 2h13' | 1h47' | 0h05' – 7h24' | 24.93 | 11.73 | 28.57 | | 25.28 | 24.61 | | 21.40 | 28.27 | | 22.87 | 30.50 | |
| **Roles** | | | | | | | | | | | | | | | | | |
| Clinical expert | | | | | | | | | | | | | | | | | |
| *Total* | 113h02' | 3h03' | 2h09' | 0h00' – 7h07' | 34.19 | 51.67 | 29.37 | | 35.62 | 32.83 | | 38.78 | 29.84 | | 36.67 | 27.49 | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Direct patient related* | 57h57' | 1h34' | 1h30' | 0h00' – 5h432' | 17.27 | 26.64 | 14.68 | | 18.30 | 16.29 | | 18.53 | 16.07 | | 18.20 | 14.74 | |
| *Indirect patient related* | 35h54' | 0h58' | 0h51' | 0h00' – 3h33' | 11.13 | 20.07 | 5.66 | | 11.86 | 10.44 | | 15.11 | 7.36 | | 12.84 | 6.52 | |
| Educator and coach | 36h13' | 0h58' | 0h52' | 0h00' – 3h16' | 11.32 | 11.22 | 11.34 | | 9.53 | 13.01 | | 11.81 | 10.86 | | 11.37 | 11.17 | |
| Change agent and | 24h34' | 0h40' | 1h02' | 0h00' – 3h46' | 7.41 | 4.51 | 8.20 | | 4.71 | 9.96 | | 6.00 | 8.74 | | 6.13 | 10.86 | |
| innovator | | | | | | | | .028* | | | .821 | | | .709 | | | .375 |
| Researcher | 21h32' | 0h35' | 0h45' | 0h00' - 3h11' | 6.72 | 3.51 | 7.61 | | 8.35 | 5.18 | | 8.28 | 5.24 | | 8.08 | 3.06 | |
| Leader | | | | | | | | | | | | | | | | | |
| *Total* | 16h16' | 0h26' | 0h39' | 0h00' – 2h35' | 4.84 | 0.25 | 6.11 | | 5.62 | 4.11 | | 3.90 | 5.74 | | 4.45 | 5.89 | |
| *Clinical* | 8h20' | 0h14' | 0h27' | 0h00' – 2h07' | 2.69 | 0.25 | 3.36 | | 3.24 | 2.16 | | 3.27 | 2.13 | | 3.00 | 1.84 | |
| *Professional* | 7h56' | 0h13' | 0h33' | 0h00' – 2h35' | 2.16 | 0.00 | 2.75 | | 2.38 | 1.94 | | 0.62 | 3.61 | | 1.45 | 4.05 | |
| Collaborator | 39h58' | 1h05' | 0h48' | 0h01' – 3h34' | 12.09 | 11.11 | 12.36 | | 10.85 | 13.27 | | 9.47 | 14.57 | | 10.14 | 17.36 | |
| Facilitator of ethical | 0h13' | 0h00' | 0h02' | 0h00' – 0h13' | 0.07 | 0.00 | 0.09 | | 0.00 | 0.13 | | 0.00 | 0.13 | | 0.09 | 0.00 | |
| decision-making | | | | | | | | | | | | | | | | | |
| **Other activities** | | | | | | | | | | | | | | | | | |
| Other activities | 77h09' | 2h05' | 0h37' | 0h44' – 3h39' | 23.36 | 17.73 | 24.91 | | 25.33 | 21.50 | | 21.76 | 24.88 | | 23.06 | 24.18 | |

[*]APN: Advanced Practice Nurse

[¥]SD: standard deviation

[$]PH: peripheral hospital; UH: university hospital

[¥]p-values are calculated for the proportion of working time spent on (1) the domain of patient and family (total), team, healthcare organization, and other activities; (2) the roles of clinical expert (total), educator and coach, change agent and innovator, researcher, leader (total), facilitator of ethical decision-making, and other activities.

*p < 0.05

Figure 2 illustrates the distribution of time spent during the workday on the domains and other activities. Results of the Chi-squared analyses in Table 2 showed that the distribution of time spent on the three domains and other activities differed between APNs in university and peripheral hospitals ($p < .001$). Participants in peripheral hospitals spent twice as much time on activities in the patient and family domain (50.82%) compared with APNs in university hospitals (25.25%). The healthcare organisation was the domain that APNs used the second largest amount of time on with an average of 2 h 13 min (24.93%). Participants in university hospitals spent almost 2.5 times as much time on this domain (28.57%) compared with APNs in peripheral hospitals (11.73%). With an average of 1 h 52 min, participants devoted the smallest amount of their time to the team domain. As shown in Table 2, no differences were found in the distribution of time spent on the domains and other activities by number of years of work experience and type of hierarchical or functional supervisor.

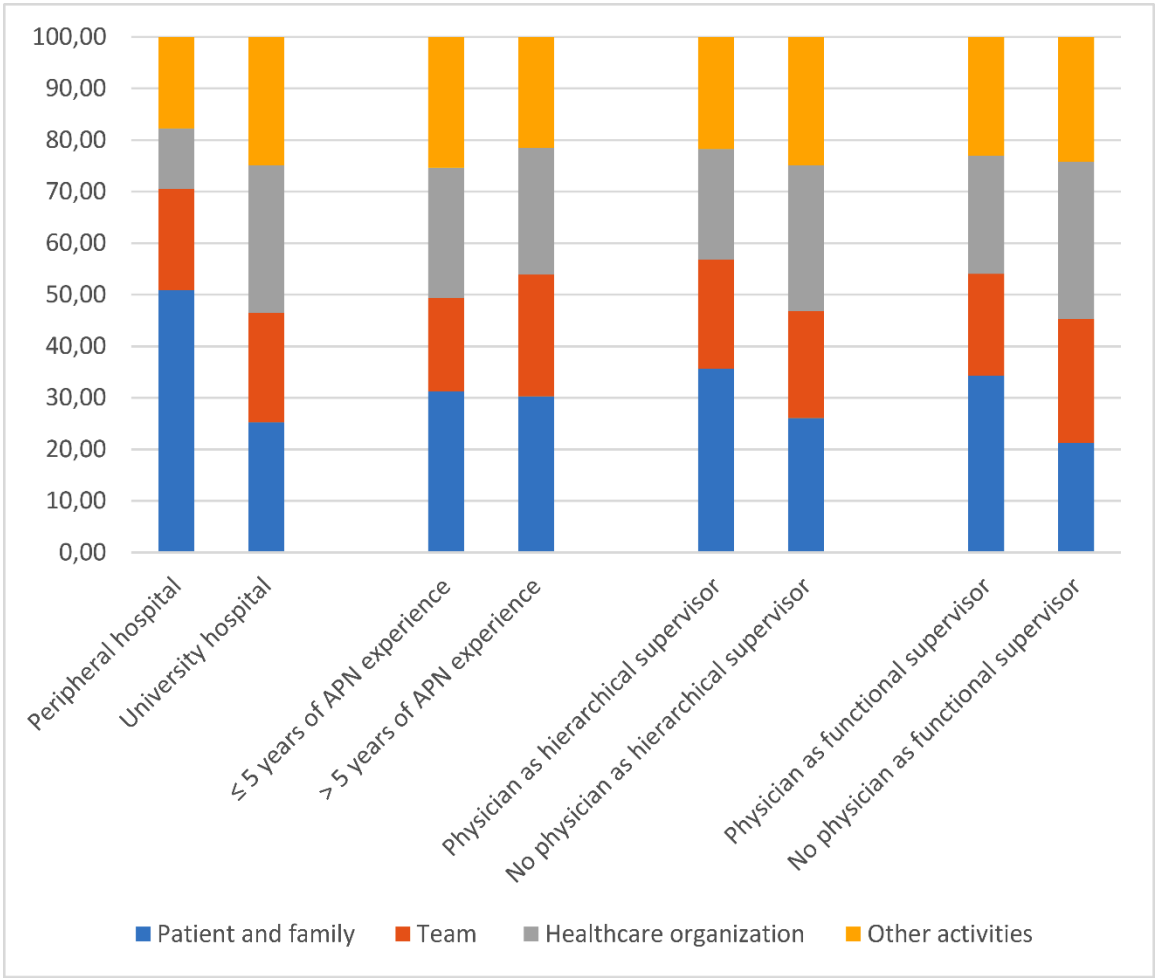


Figure 2. Proportion of working time spent in domains and other activities

*Time spent on activities in roles*

The distribution of the daily working time spent on the roles and other activities by type of healthcare organisation, number of years of APN experience, and type of supervisor is displayed in Figure 3. Overall, most of APNs' daily working time was used for activities in the role of clinical expert (34.19%), collaborator (12.09%), and educator and coach (11.32%). Results of Chi-squared analyses shown in Table 2 illustrate that the distribution of time spent on the roles and other activities differs according to type of healthcare organisation ($p = .001$). No differences could be found according to the number of years of work experience, type of hierarchical supervisor, and type of functional supervisor.

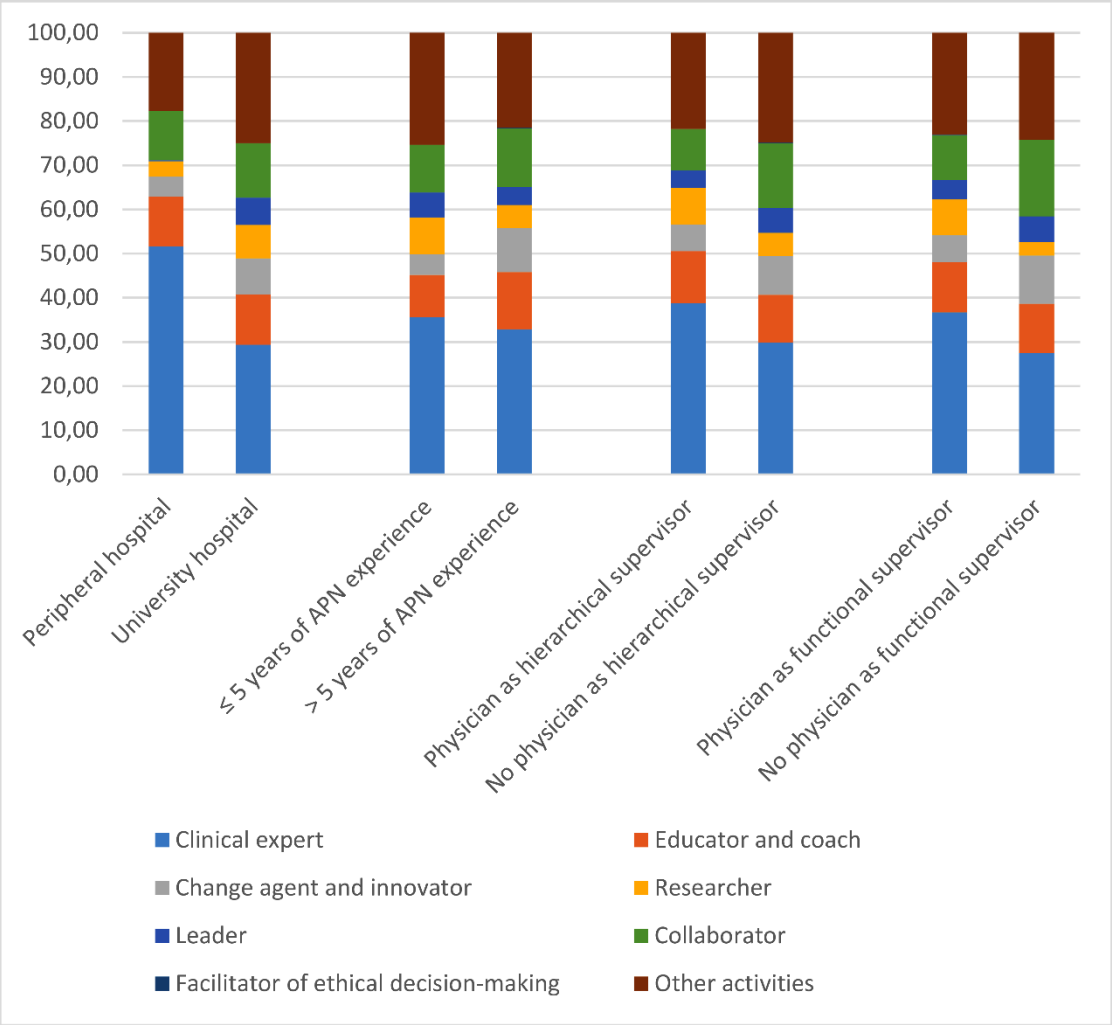


Figure 3. Proportion of working time spent on roles and other activities

Participants in peripheral hospitals spent 1.75 times as much time on activities (51.67%) as a clinical expert than APNs in university hospitals (29.37%). Nearly double the amount of time was spent on direct patient-related activities by APNs in peripheral hospitals (26.64%) as by their colleagues in university hospitals (14.68%). Participants in peripheral hospitals used almost four times as much time on indirect patient-related activities (20.07%) compared with APNs in university hospitals (5.66%). Furthermore, APNs with hierarchical or functional physician supervisors devoted almost twice as much time to indirect patient-related tasks as APNs with a nursing supervisor or no supervisor.

Participants executed activities in the role of change agent and innovator for 7.41% of their daily working time. Almost twice as much time was spent in this role by APNs in university hospitals (8.20%) compared with APNs in peripheral hospitals (4.51%). Similarly, a double amount of time was devoted on change and innovation activities by APNs with more than 5 years of experience (9.96%) in comparison with participants with maximum 5 years of APN experience (4.71%).

Participants executed activities in the role of researcher for 35 min or 6.72% of their daily working time. When working in a university hospital, APNs had double the amount of time (7.61%) for research activities compared with colleagues in peripheral hospitals (3.51%). Results also showed that participants with a physician as (one of) their functional supervisor(s) spent over 2.5 times more time on research activities (8.08%) than APNs with a nursing supervisor or no supervisor (3.06%).

On average, APNs spent 26 min per day equaling 4.84% of their time on leadership activities. Clinical leadership activities took up 2.69% of APNs' daily working time, while 2.16% of the time was devoted to professional leadership activities. In general, APNs in university hospitals spent 24 times as much time on leadership activities (6.11%) than APNs in peripheral hospitals (0.25%). None of the participants in peripheral hospitals spent any time in a professional leadership role during the observations. However, APNs in university hospitals dedicated 2.75% of their time to professional leadership activities. The time spent on the role of facilitator of ethical decision-making represents 0.07% of the total observation time. This is due to only one APN dedicating time to this role. The participant, who worked in a university hospital, spent a total of 13 min on the following activity linked to the domain of the team: mediation in a disagreement between colleagues about the care for a palliative patient.

*Time spent on other activities*

APNs spent nearly a quarter of their daily working time (23.36%) on other activities, that is, activities not categorised in any of the examined APN domains or roles. Most time was used for breaks, which included lunch breaks, coffee breaks, toilet breaks, and waiting for meetings to begin. This counted for 35.33% of the total time spent on other activities and for

8.63% of the total daily working time. Participants in university hospitals spent 2.5 times as much of their total working day on breaks (9.93%) compared with APNs in peripheral hospitals (3.91%).

Nearly one-third of the 'other activities' time (31.39%) was used for travelling inside the hospital (e.g. to attend meetings). This counted for 7.11% of the daily working time, with APNs in university and peripheral hospitals using, respectively, 6.89% and 7.92% of their workday on travel inside the hospital.

## 4. Discussion

This study examined the time use of APNs in university and peripheral hospitals in Flanders. Results show that APNs executed activities in the three domains of the patient and family, the team and the healthcare organisation. Participants used the largest amount of their daily working time on activities in the domain of the patient and family. This result is in line with previous studies indicating that CNSs spent approximately one-third of their time on this domain (Darmody, 2005, 2011; Oddsdóttir & Sveinsdottir, 2011). In addition, results of our study indicate that APNs in hospitals execute all advanced practice roles as defined by Hamric et al. (2013), with the exception of the role of facilitator of ethical decision-making. Several studies show that CNSs spent most time on the role of clinical expert (Kilpatrick et al., 2013; Leary et al., 2008; Oddsdóttir & Sveinsdottir, 2011; Ream et al., 2009), which is in line with our results. It is however noteworthy that participants with a physician as (one of) their functional supervisor(s) dedicated almost twice as much time to the execution of administrative, indirect patient-related activities than APNs with a nursing supervisor. This finding might suggest that APNs use part of their time on administrative tasks that otherwise might have been executed by physicians themselves. A heavy administrative workload could impede dedicating time to roles where APNs could substantially contribute to the advancement of nursing as a profession and discipline. Therefore, it is important that both APNs and their supervisors become aware of these findings as to secure enough time for direct patient-related activities and the nursing and 'advancement' focus in the APNs' time use. In addition, nursing supervision to all APNs is worth considering.

Our results further indicate that participants in peripheral hospitals used half the amount of time on the role of change agent and innovator than APNs in university hospitals. Moreover, none of the APNs in peripheral hospitals used any time on professional leadership activities. Although professional leadership activities might be under-represented in this study due to in-hospital observations only, both innovation and leadership are specifically important fields for APNs as advancement is essential for the nursing profession and science on a healthcare organisational, national, and international level.

Interestingly, only one activity was registered in the role of ethical decision-making in our study. This may be due to the role being less explicit and interwoven with other roles (e.g. activities being categorised in the role of collaborator when an APN participated in a multidisciplinary discussion on the patient's ethical problems). The limited amount of time spent on ethical decision-making activities could also be due to APNs not feeling competent enough to fully take on the role of initiator and facilitator of ethical discussions (Van Hecke et al., 2019). As ethical decision-making skills are expected of APNs, who are in leadership positions (Grace & Milliken, 2016), it is vital that advanced practice nursing curricula focus on clinical, research, business, and legal ethics (Peirce & Smith, 2008). Furthermore, APNs with adequate ethical decision-making skills could stimulate the development of reflective and analytical skills in the nursing team, for example, by executing an advisory role in the creation of an ethical framework or by introducing and leading intraprofessional case study discussions. After all, nurses do not always demonstrate the competencies necessary to engage in ethical reflection and ethical decision-making, despite increasing ethical demands in current health care (Cannaerts, Gastmans, & Dierckx de Casterlé, 2014). In addition, APNs with adequate ethical decision-making and ethical leadership skills could stimulate the engagement of themselves and other nurses in interprofessional and interdisciplinary discussions as part of ethical decision-making processes. Literature shows that interdisciplinary discussions between nurses and physicians enrich the ethical decision-making process and enhance the ethical decision-making climate by the interprofessional transfer of knowledge, experience and values (Benoit et al., 2018; Jensen et al., 2019). An optimal ethical decision-making climate is defined as "a climate in which clinicians are empowered to speak up and in which they feel that their opinion is valued and subsequently integrated into the decision-making process" (Jensen et al., 2019). Such a safe climate is important, as a poor ethical decision-making environment, in which members of the healthcare team are not empowered to participate in the decision-making process or to advocate for the patient, is associated with several adverse patient outcomes (Jensen et al., 2019). As literature on APNs' ethical decision-making competencies is rare, further research is indicated to uncover barriers and facilitators for the full execution of this advanced practice nursing role.

Finally, nearly a quarter of APNs' time was spent on other activities. This is consistent with results of similar studies finding that 'other activities' took a large amount of APNs' time (Darmody, 2005, 2011; Oddsdóttir & Sveinsdottir, 2011; Ream et al., 2009). On average, 7.11% of the daily working time was spent on travelling inside the hospital. This might result from the architectural structure of hospitals, leading to long distances between different wards. The result can be considered as an inefficient investment of time. As other activities took up so much of APNs' time, further research could investigate the processes behind this time use and indicate whether time could be spent more efficiently. Making an inventory of APNs' task performance in an organisation is necessary to reduce the inefficient working time and to increase the valuable working time (Darmody, 2005). In addition, an inventory of APNs' task performance and time use on a national level, as

examined in this study, contributes to clarification of Belgian APNs task performance and time use, which could inform the accuracy with which the term CNS is used to describe these roles in Belgium. Furthermore, results could contribute to the comparison of advanced practice roles internationally and give insight into factors associated with differences in APNs' time use.

### 4.1. Strengths and limitations

This study has some strengths and limitations that should be noted. Compared with previous studies (Darmody, 2005, 2011; Oddsdóttir & Sveinsdottir, 2011), we used a stratified and larger sample of APNs that worked both in university and peripheral hospitals and in several nursing specialties. In addition, non-participant observation was used as a data collection method. This method is more objective in comparison with self-reporting scales (Mayo et al., 2010; Polit & Beck, 2008). Observations were also independently carried out by two researchers with satisfying inter-rater reliability rates. However, the following study limitations need to be considered. Firstly, the subsets of APNs working in university and peripheral hospitals were unequally distributed, leading to an over-representation of APNs from university hospitals.

Secondly, each APN was observed during 1 day only. The observations were made during a working day in the APN's hospital. This could have led to certain activities being under-represented during the day of observation, for example, giving guest lectures at university (colleges), attending a(n) (inter)national conference to present research results, or for the purpose of continuous professional development. In fact, three APNs were observed on another date than originally proposed, as they were attending a conference or out-of-hospital meeting. These examples of professional leadership activities are not taken into account in this study and could therefore introduce a bias in the time spent in the role of (professional) leader. The under-representation of out-of-hospital activities could, in turn, have led to 'in-hospital' activities being over-represented during the observation days. Furthermore, APNs could have acted differently because they knew they were being observed (Darmody, 2005; Polit & Beck, 2008).

Thirdly, an activity could only be categorised in one category despite the fact that some activities belonged to several categories simultaneously. Fourthly, the categorisation of activities in the domains and roles of the framework could have introduced a bias in APNs' professional time use. As the use of Hamric's model (Hamric et al., 2013) leaves room for interpretation in some competencies, a different categorisation of activities could have led to different results in time use in domains and roles. However, measures were taken by the researchers to increase the inter-rater reliability of the categorisation of activities into the framework as described in the method section. Nevertheless, the use of another advanced practice nursing framework instead of Hamric's model (2013), for example, the Strong Memorial Hospital's model

of advanced practice nursing (Ackerman, Norsen, Martin, Wiedrich, & Kitzman, 1996), could also have led to a different categorisation of activities and thus to differences in time use calculations.

Finally, the scope of this study was limited in terms of the study population being restricted to APNs working in a hospital setting. APNs in primary care, mental health care, and rehabilitation were not included, thus limiting the generalizability of the study results.

## 5. Conclusion

Results from this study examining the time use of hospital-based APNs in Flanders show that the distribution of time spent on domains, roles, and other activities differed according to the type of healthcare organisation. However, no differences in the distribution of daily working time were found according to the number of years of work experience and the type of hierarchical or functional supervisor. Participants spent most of their time on the domain of the patient and family, followed by the healthcare organisation and the team. Participants executed all advanced practice roles as defined by Hamric et al. (2013), with the exception of the role of facilitator of ethical decision-making. Most of APNs' time was spent on the role of clinical expert, collaborator, and educator and coach. However, APNs dedicated only 4.84% of their time to leadership activities, despite their importance for the advancement of the nursing profession and science on a healthcare organisational, national, and international level. Remarkably, nearly a quarter of APNs' time was spent on other activities, with 7.11% of the daily working time spent on travelling inside the hospital. Further research could investigate the processes behind this inefficient time use and indicate whether and how valuable working time could be increased. Furthermore, research is indicated to uncover barriers and facilitators for the full execution of APNs' roles. Future studies should specifically focus on the leadership and ethical decision-making role and on strategies for securing the nursing and 'advancement' focus in APNs' time use.

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# CHAPTER 6

## Sustaining the quality of midwifery practice in Belgium: challenges and opportunities for advanced midwife practitioners

Chapter based on:

Goemaes, R., Beeckman, D., Verhaeghe, S., & Van Hecke, A. (2020). Sustaining the quality of midwifery practice in Belgium: challenges and opportunities for advanced midwife practitioners. *Midwifery,* Jul 5;89:102792. doi: 10.1016/j.midw.2020.102792. Advanced online publication. Category Nursing (2019): 36/123 (Q2) – IF: 1.778.

## ABSTRACT

**Background:** Midwifery practice is essential in achieving high-quality maternal and newborn care in all settings and countries. However, midwifery practice has become more complex over the past decades. Considerable demands are being placed on midwives to meet increasing epidemiological, socio-economic, and technological challenges. These require a well-trained midwifery workforce ready to shape the care in the near and long-term future.

**Objective:** To discuss advanced midwife practitioner role implementation in Belgium as a possible answer to healthcare-related challenges that impact midwifery practice. Furthermore, to stimulate a debate within the profession at all levels in Belgium and in countries considering advanced midwife practitioner roles.

**Method:** The framework by De Geest et al. (2008) served as a basis for discussing the drivers for advanced midwife practitioner role implementation: the legal, policy and economic context, workforce issues, education, practice patterns, and healthcare needs of the population.

**Findings:** A legal basis for advanced midwife practitioner role implementation is lacking in Belgium. Remuneration opportunities for the non-clinical part of AMP roles (e.g. leadership and innovation activities) are missing. It might be challenging for healthcare organisations to support the implementation of such roles, as immediate revenues of non-clinical activities are absent. However, sufficient potential resources are available to fill in future advanced midwife practitioner positions. Additionally, advanced midwife practitioner specific master programmes are being planned in the near future.

**Conclusions:** Although several barriers for the implementation of advanced midwife practitioner roles were identified, a discussion should be held on the opportunities of implementing these roles to facilitate the development of new models of care that meet current and future challenges in midwifery practice and healthcare. After initial discussions among midwives in academic, managerial, and policy positions, other relevant stakeholders such as obstetricians, general practitioners, associations representing healthcare organisations, and policy makers should be involved as a next step.

## 1. Introduction

Midwifery practice is essential in achieving high-quality maternal and newborn care in all settings in all countries (Renfrew et al., 2014; ten Hoope-Bender et al., 2014; United Nations Population Fund (UNFPA, 2014); Luyben et al., 2017). An extensive body of evidence substantiates the contribution of midwifery practice to maternal and newborn survival and health (Luyben et al., 2017). An analysis of 461 systematic reviews by Renfrew et al. (2014) showed 56 short-term and long-term outcomes that can be improved by educated, trained, licensed, and regulated midwives. These outcomes are reduced maternal and neonatal mortality and morbidity, reduced stillbirth and preterm birth, a decreased number of unnecessary interventions, and improved psychosocial and public health (Renfrew et al., 2014). Mounting evidence illustrates that women receiving midwife-led (continuity) models of care are more likely to be satisfied with their care and less likely to experience adverse outcomes for themselves or their infants (Sutcliffe et al., 2012; Tracy et al., 2013; Perriman et al., 2018; Sandall et al., 2016). Growing evidence concludes that midwifery practice is associated with more efficient use of resources (Renfrew et al., 2014) and that midwife-led care for women with low-risk pregnancies and births is cost-effective (Bernitz et al., 2012; Padhraig et al., 2013; Tracy et al., 2013; Kenny et al., 2015; Walters et al., 2015; Gonze et al., 2019; Koto et al., 2019). Competent midwives make a pivotal difference to the lives of women and newborns worldwide (Luyben et al., 2017).

It should be acknowledged that midwifery practice has become more complex over the past decades. Considerable demands are being placed on midwives to meet healthcare-related challenges. Firstly, epidemiological trends such as the rising number of women giving birth at an advanced age and increased rates of pre-existing pathologies (e.g. obesity, diabetes) heighten the risk of maternal and infant complications (Bogaerts et al., 2013; Euro-Peristat Project, 2018; Benhalima et al., 2019). Secondly, socio-economic challenges are increasing, confronting midwives with more women living in difficult social situations and an increase in complexity of populations due to augmented migration and diversity (Philimore, 2016; Mestdagh et al., 2019). Thirdly, technological advances in genetics (e.g. non-invasive prenatal testing, total genome sequencing), reproductive medicine, foetal and neonatal medicine strengthen the need for prenatal and postnatal (genetic) counselling and for healthcare professionals to be competent to guide women in informed decision making before and after screening and diagnostic tests, and treatments (Westerfield et al., 2014). As midwives are confronted with the increasing complexity of ethical problems due to these technological advances, they need good ethical competencies as well (Oelhafen et al., 2017). Fourthly, societal expectations of healthcare delivery have changed. There is an evolution towards more person-centred care, continuity of care, patient participation, and interdisciplinary care. In addition, the need for cost-effective and continuous accessible healthcare has led to policy developments such as a shorter hospital stay for mother and baby after an uncomplicated pregnancy and birth, the necessity of effective seamless care, and the importance

of high quality accessible primary care (Ford et al., 2012; Akselsdottir et al., 2013; Bowers and Cheyne, 2016; Bowers et al., 2018) .

All of these challenges require a well-trained, competent midwifery workforce ready to shape the care in the near and long-term future through leadership, research, education and innovation in midwifery. A recent survey by Vermeulen et al. (2019) on the current state of professionalisation of midwifery in Europe revealed that progress in midwifery education and research has taken place in the last 20 years. However, the results of this survey indicated that research findings were insufficiently implemented into midwifery practice. According to Vermeulen et al. (2019), there is a lack of well-recognised and influential clinical academic midwives in midwifery practice in many countries. It was concluded that midwives' current roles in practice as well as leadership and their influence on healthcare culture and politics are matters of concern. Additionally, maternity care in Belgium is predominantly obstetrician-led, hierarchically organised and highly standardised, with high medical intervention rates and a medical model of birth being the norm (Christiaens et al., 2013). Alternative models of maternity care, such as midwife-led care, are becoming more available but remain limited (Van kelst et al., 2013a). The legal framework for midwives regulates autonomous midwifery practice for healthy women and newborns during pregnancy, birth and the postnatal period (Law of April 22, 2019). This means that midwives are educated to autonomously take care of women at low obstetric risk during pregnancy, birth, and the postnatal period (Van kelst et al., 2013b). The education programmes for midwives consist of a three-year direct-entry programme equivalent to 18 ECTS and leads to a professional bachelor's degree in Flanders, the northern and Dutch speaking part of Belgium. In the southern and French speaking Walloon region, the education consists of a four-year bachelor programme equivalent to 240 ECTS, in which students spend one year on nursing, one year on nursing and midwifery, and two years on midwifery (Emons and Luiten, 2001). However, as formal boundaries between primary and secondary care are lacking, the majority of Belgian women directly consult an obstetrician for maternity care (Christiaens et al., 2013).

As a possible answer to meet the aforementioned challenges, the authors of this discussion paper suggest that the implementation of advanced midwife practitioner (AMP) roles is worth exploring. As these challenges occur both on a national level in Belgium and on a European level, this paper is presented as a stimulus for debate within the profession at all levels in Belgium and in countries in which the implementation of AMP roles is being considered or initialized.

## 2. Background

Advanced midwifery practice can be defined as "*a level of midwifery practice at which midwives use their expertise, management and clinical leadership skills to provide evidence-based, tailored care for women and their families*

*independently and autonomously. Professional leadership and research skills are used to evaluate practice and advance midwifery as a profession and science"* (Goemaes et al., 2016). Advanced practitioners execute a variety of roles besides the role of clinical expert: consultant, educator, researcher, innovator, clinical and professional leader, policy advisor, and ethical decision-making facilitator (Hamric, Hanson, Tracy, & O'Grady, 2013). The midwifery professions in several countries increasingly expect nurses and midwives to have a master's degree as an entry level for advanced practitioner roles (Begley et al., 2007). Some organisations even recommend a (practice-based) doctorate or PhD (American Association of Colleges of Nursing, 2004; Begley et al., 2007; Wilson 2018).

The implementation of AMP roles is a relatively new trend in European countries (e.g. Ireland, the United Kingdom) (Begley et al., 2007; Goemaes et al., 2016). Such innovative roles are considered as vital to improve midwifery education, care, research and practice. It significantly contributes to the development of the profession. (Begley et al., 2007; Robinson, 2012). Additionally, AMP roles have been implemented in several European countries to cope with changing demands and reduced resources and to provide solutions to increase efficiency and raise standards in the healthcare system (Robinson, 2012). Advanced practitioner roles also create academically educated midwives the opportunity to pursue a career "at the bedside" instead of managerial, research or educational positions (De Geest et al., 2008).

The evidence supporting advanced practitioners' unique contribution to professional outcomes such as staff education or guideline development is limited, as is the evidence of their impact on organisational outcomes such as quality of care and access to services (Begley et al., 2014; Casey et al., 2017a). However, the potential positive impact of such roles cannot be doubted (Casey et al., 2017b). Several studies reporting on clinical outcomes support the desirability of AMP roles in healthcare settings (Begley et al., 2010; American College of Nurse Midwives, 2012; Casey et al., 2017a). In addition, AMPs are believed to launch new initiatives in care, improve continuity and a more holistic approach of care compared with the care given by doctors (Begley et al., 2014). Another important factor in the provision of improved patient outcomes is advanced practitioners' leadership capability (Wong et al., 2013; Higgins et al., 2014). Although all midwives should be stimulated to show leadership (Institute of Medicine, 2011; Elliott et al., 2016), AMPs are particularly well suited for the leadership role as they have expert levels of knowledge, possess complex decision-making skills, and are responsible for practice innovation and strategic professional development (Elliott et al., 2016; Lamb et al., 2018). However, the number of AMPs in Belgium and other European countries is small. In the United Kingdom for example, consultant midwife roles were introduced in the early 2000s with a focus on expert clinical practice, clinical and professional leadership, research and education, and practice and service development. After nearly two decades, a recent survey in the UK identified 84 consultant midwives (Wilson et al., 2018) The Royal College of Midwives (2019) has called for more consultant midwives,

as there are fewer than there should be in order to achieve better and safer care for women and their families (The Royal College of Midwives, 2019). Similarly, 8 midwives were registered as AMPs since the introduction of such roles in Ireland in 2000 (Department of Health, 2019). In Flanders, the northern part of Belgium, 5 AMPs working in university or peripheral hospitals were found. In contrast to the majority of midwives working in clinical practice in Belgium, the AMPs were involved in leadership, innovation, and research activities besides their clinical practice roles (Van Hecke et al., 2018).

## 3. Method

The framework by De Geest et al. (2008) was used as a basis to guide the points of discussion in this paper. The framework describes the following drivers for guiding the introduction and development of advanced practice nursing roles: the legal, policy and economic context, workforce issues, education, practice patterns, and healthcare needs of the population. The latter have been described in the introduction section.

## 4. Points of discussion

In this section, both the current knowledge and gaps are presented with regard to the implementation of AMP roles in Belgium from a legislation/policy, education, workforce, and financial and economic point of view.

### 4.1. Legislation and policy

In Belgium, the legal framework regulates autonomous midwifery practice for healthy women and newborns during pregnancy, birth and the postnatal period (Law of 22 April 2019). This means that midwives are authorised to act as the first point of contact in the care of healthy pregnant women, during childbirth and for postnatal care. A professional and competency profile describes the domains in which midwives practice in Belgium and indicates which competencies midwives need after their basic training and during their entire professional career (Federal Council for Midwives, 2016). In 2014, the legal framework for midwifery practice was extended to include prescription authority. However, the latter might not be perceived as advanced practice in Belgium, as prescription authority is part of all undergraduate midwifery educations. Although the Federal Midwifery Council formulated an advice on the performance of gynaecological and prenatal ultrasound examinations by midwives with specialist training at university level (Federal Council for Midwives, 2017), a legal framework for advanced midwifery practice and a professional and competency profile for academically educated midwives in clinical practice are currently lacking. This implies that there is no legal basis for AMP roles, titles, educational requirements, certification criteria, transitional measures for midwives already in clinical practice aspiring such roles, and interprofessional agreements.

## 4.2. Education

Internationally, there is an increased expectation of AMPs that they are educated at master's level for entry into advanced practice (Begley et al., 2007). In Belgium, several master programmes in health-related disciplines are available for midwives in multiple universities around the country, e.g. Master of Science in Nursing and Midwifery, Master of Science in Health Promotion, Master of Science in Public Health. None of these master programmes currently have a clinical practice component or internship that is large and specialised enough to enable midwives to gain clinical expertise in a specialist domain. None of these master programmes lead to a legally established "advanced practice" degree which allows midwives direct access to a legally regulated AMP role. However, AMP specific master programmes with a considerable amount of study time for specialised clinical practice experience are being planned in the near future, thereby facilitating the necessary education and training for midwives who aspire an AMP role.

## 4.3 Workforce

In contrast to many countries struggling with a shortage of midwives and high drop-out rates (Robinson, 2012), the number of midwives graduating after a bachelor's programme in Belgium is high (Benahmed, Hendrickx, Adriaenssens, & Stordeur, 2016). Unpublished data from a survey on career expectations among undergraduate midwifery students in Flanders (n= 228) showed that 33% are interested in continuing their education by registering for a specialist non-university degree or an academic master's programme (Asteur, Pielaat, Goemaes, & Van Hecke, 2018). Furthermore, it is estimated that about 60 to 80 midwives yearly successfully complete a master's programme in Flanders alone. These numbers do not take into account the number of master educated midwives that are already working in clinical practice and that are interested in an AMP role. Data on such numbers are lacking. Nevertheless, sufficient potential resources are available to fill in future AMP positions. An optimal number of AMPs for the Belgian healthcare context has however to be defined. This will be a challenging exercise due to transitions and ongoing discussions regarding maternity care in Belgium, such as a shorter hospital stay in the postpartum period for healthy women and newborns, a heightened focus on integrated prenatal and postnatal care, and a trend towards less and larger maternity services collaborating through hospital networks (Benahmed et al., 2014; Benahmed et al., 2019; Lefèvre et al., 2019). These changes in the healthcare delivery model stress the importance of seamless care (Goemaes et al., 2018), i.e. the desirable continuity of care delivered to a patient in the healthcare system across the spectrum of caregivers and environments (Canadian Society of Hospital Pharmacists and Canadian Pharmacists Association, 1999).

### 4.4 Financial and economic aspects

Financing of healthcare professionals such as midwives is executed via a fee-for-service system. A predetermined amount is paid to midwives through the compulsory Belgian health insurance and social security contributions for each discrete service provided as part of the legal scope of midwifery practice in Belgium (e.g. consultation, tests, and procedures) (Miller, 2009). Midwives can invoice for their services autonomously and independently. These costs are reimbursed through health insurance funds. However, no remuneration opportunities are available for services that midwives provide in the non-clinical part of AMP roles, e.g. activities involving leadership, research, innovation, ethical decision-making, and the extent to which evidence based practices are implemented. It might therefore be challenging for healthcare organisations (e.g. hospital boards) to support the implementation of AMP roles, as immediate and direct revenues of non-clinical AMP activities are absent. The lack of cost-effectiveness analyses of AMP roles on a national and international level might hinder the implementation of such roles in Belgium. Additionally, obstetricians are also reimbursed through the fee-for-service model for care provided to women with both low and high obstetric risk. If AMPs focus on task substitution of physicians including care provision of childbearing women with low obstetric risk instead of complementary activities, they might be seen as a possible financial and professional threat to obstetricians (Goemaes et al., 2018).

## 5. Recommendations

Internationally, supportive policies are considered essential for the implementation of advanced practitioner roles and for advanced practitioners to practice to their full potential. The lack of supportive policies, legislation, and professional regulation is recognised as a barrier and a problem not only for advanced practitioners themselves, but also for the populations who seek their healthcare services (Schober, 2017). In order to successfully put in place such policies, several crucial questions should be answered within the midwifery profession, by midwives in academia, midwifery associations, and midwives in leadership and management positions regarding education and clinical practice. The discussion should focus on the most meaningful way in which AMPs could be implemented, as the number of AMPs needed in healthcare organisations are initially expected to be limited. However, the number of healthcare organisations working together and forming networks is increasing in Belgium. Furthermore, the importance of high quality transitional and seamless care is augmenting. These evolutions might create new opportunities for the implementation of AMP roles.

Firstly, a discussion should be held on the opportunities of implementing AMP roles to facilitate the development and implementation of new models of care, in which midwives can practice according to their legally regulated full scope, e.g. midwifery-led care, one-to-one care. Secondly, the opportunities for the implementation of AMP roles that are complementary to those of obstetricians and general practitioners should be examined, with task substitution of physicians

being limited to a small number of highly specific tasks. Thirdly, task division between AMPs and head midwives or midwifery managers should be clarified, as unclear lines of responsibility of staff members is a barrier for advanced practitioner role implementation (Torrens et al., 2019).

After initial discussions within the midwifery profession, other relevant stakeholders such as obstetricians, general practitioners, associations representing healthcare organisations, and policy makers should be involved as a next step.

## 6. Conclusion

As the midwifery workforce has become more and more challenged by patient acuity and increasing demands of the healthcare system, the implementation of AMP roles should be explored as a possible answer to these challenges. Although a legal basis for the implementation of such roles and remuneration opportunities for the non-clinical part of AMP roles are currently lacking in Belgium, sufficient potential resources are available to fill in future AMP positions. In addition, AMP specific master programmes with a considerable amount of study time for specialised clinical practice experience are being planned in the near future. Therefore, a discussion should be held among midwives in academic, managerial, and policy positions about the opportunities for AMP role implementation.

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# CHAPTER 7

# General discussion

## 1. Main insights

Evidence on the contribution of advanced practice nurses (APNs) and advanced midwife practitioners (AMPs) on clinical, professional, and organisational healthcare outcomes is growing (Begley, Murphy, Higgins, & Cooney, 2014; Gerrish et al., 2011; Litchman, Schlepko, Rowley, McFarland, & Fiander, 2018; Wong, Cummings, & Ducharme, 2013; Woo, Lee, & Tam, 2017). An increasing number of countries have introduced APN or AMP roles (Maier, Barnes, Aiken, & Busse, 2016; Parker & Hill, 2017). Yet, APN roles have not been well established in Belgium, despite the availability of academic master's programmes for nurses and midwives since the 1980s and the unofficial introduction of APN roles in the mid-2000s. The implementation of AMP roles can even be described as in its infancy in Belgium, although several elements described in chapter 6 support the relevance of AMP role implementation in this country as much as in others. With the intention to inform and substantiate further APN and AMP role implementation in Belgium, this dissertation provides (1) a clarification of the "advanced midwifery practice" concept (chapter 2), (2) an overview of the current knowledge and gaps regarding factors influencing the implementation of AMP roles in Flanders (chapter 3 and chapter 6), and (3) an analysis of the tasks and competencies of APNs and AMPs in Flanders (chapter 4), and of APNs' time use (chapter 5).

Firstly, this dissertation has led to a better understanding of advanced midwifery practice and factors influencing the implementation of AMP roles. Chapter 2 revealed that an international consensus definition of advanced midwifery practice has been lacking. However, several attributes were identified: autonomous and expert practice, clinical and professional leadership, and research. Advanced midwife practitioner roles are relatively new and their implementation has internationally been less widespread compared to APN roles. Similar to advanced practice nursing however, the results of the concept analysis showed that there is a wide variety in the emergence, titles, roles, and scope of practice of AMPs as these roles are implemented in country-specific healthcare contexts. Yet, the international literature that discusses implementation processes of AMP roles is scarce and literature from related healthcare disciplines such as nursing shows that the implementation of advanced practitioner roles is complex. Therefore, factors influencing the implementation of AMP roles in Flanders were examined in chapter 3. Multiple factors on a governmental, healthcare organisational, and workforce level were found to affect the implementation process. This illustrates its complexity in the Belgian healthcare system. Budgetary constraints on a governmental and healthcare organisational level were mentioned as main barriers for role implementation. The current fee-for-service financing model of healthcare professionals was also seen as an impediment, as the implementation of AMP roles could be considered a financial and professional threat by related disciplines, such as obstetricians. Healthcare managers' and midwives' attitudes towards these roles were also considered essential, highlighting the need for an astute implementation plan involving all relevant stakeholders. Such a plan should

also take into consideration the specificities of midwifery, as participants warned against automatically transferring the advanced practice nursing concept to midwifery due to differences in legislation, autonomy, and the limited number of midwifery care domains.

Documenting the added value of AMP roles was regarded a prerequisite for gaining support to implement such roles, while healthcare organisations' heightened focus on quality improvement and client safety was seen as an implementation opportunity. Results showed that the future success rate of AMP role implementation was considered higher in university hospitals than in peripheral hospitals, making the former more suitable for pilot projects for AMP role implementation. Several reasons underpinned this point of view: scientific research being one of the cornerstones of university hospitals' mission statements; more advanced care pathway and evidence-based care implementation, and a greater need for further specialization of obstetricians. The latter was believed to enhance the need for midwives in new and expanded roles, although it was perceived vital that role expansion was considered in areas of care that were helpful to medical specialists.

Secondly, this dissertation has augmented the insight into the current content of APN and AMP roles in Flanders. Although APNs in Flanders often execute a blended role on the clinical nurse specialist and nurse practitioner continuum, their job content leans more towards the clinical nurse specialist role. Findings from the third study in chapter 4 showed that APNs and AMPs in Flanders executed tasks in all of the advanced practice domains as defined by Hamric et al. (2013): clinical expertise, guidance and coaching, consultation and consultancy, multidisciplinary cooperation and coordination of care, clinical and professional leadership, change management and innovation, research, and ethical decision-making. However, APNs and AMPs in university hospitals were more likely than their colleagues in peripheral hospitals to execute tasks in two domains: clinical expertise, guidance and coaching, and research. In addition, advanced practitioners who felt incompetent for tasks in the domains of multidisciplinary cooperation and coordination of care, and ethical decision-making were less likely to execute tasks in these domains. On the other hand, several tasks were performed by few APNs and AMPs despite many feeling competent. Remarkably, five of ten tasks performed by fewest participants belonged to the leadership domain. A minority of APNs and AMPs participated in policy meetings on a hospital (department) level, extended and maintained contacts with international professional associations an patient organisations, or participated in national and international advisory boards or governmental working groups. Findings from the fourth study in chapter 5 confirmed that the execution of leadership tasks took up a small amount of APNs' professional time, as under 5% was used for leadership activities. Although results from the previous study showed that APNs and AMPs executed self-reported tasks in all advanced practice domains, findings from the observations of their professional time use revealed that only one APN dedicated time to the role of ethical decision-making facilitator. This paradox might be explained by the fact that

an activity could only be categorized in one category despite the fact that some activities could belong to several categories simultaneously. This might have been the case for activities related to the role of ethical decision-making facilitator.

This general discussion consists of two parts. The first part of the discussion can be found in chapter 6. One of the aims of this dissertation was to discuss challenges and opportunities for AMP role implementation as a stimulus for debate within the midwifery profession in Flanders as well as on all levels and in all countries. Therefore, this part of the discussion was submitted for publication as a separate manuscript. What follows is the second part of the discussion, in which barriers for the implementation of APN and AMP roles such as intra- and interprofessional tensions, and the lack of advanced practice legislation are discussed.

## 2. Role unclarity, role conflict, and limited acceptance of APN and AMP roles

Results from APNs' and AMPs' task performance and competency analysis in chapter 4 showed that only a limited number of factors examined in this study were associated with task non-execution for the domains of clinical expertise, guidance and coaching, consultation and consultancy, multidisciplinary cooperation and coordination of care, clinical and professional leadership, change management and innovation, research, and ethical decision-making. Hence, it is likely that other factors, that were not examined in this study, influenced APNs and AMPs task execution on a domain level. As mentioned in chapter 4, several factors with an impact on advanced practitioners' ability to enact their APN or AMP role have been described (De Geest et al., 2008; Elliott et al., 2016; Heale & Rieck-Buckley, 2015). A lack of understanding of APN and AMP roles within healthcare organisations can lead to a lack of role clarity, role conflict, and variable stakeholder acceptance (Heale & Rieck-Buckley, 2015). There are indications in the studies described in chapter 3 and chapter 4 suggesting role unclarity, role conflict, and limited acceptance of APN and AMP roles in healthcare organisations in Flanders.

In the study described in chapter 4, more questionnaires were returned than links to the questionnaire were sent. The link to the digital questionnaire had thus been forwarded by eligible participants to specialized, not-master educated nurses, despite the fact that they did not meet the inclusion criteria. Several reasons might explain forwarding the link to non-eligible nurses. Firstly, the survey was executed in a period without a legal framework for advanced practice nurses in Belgium. As the APN job title was not protected and its use was not officially regulated on a national level, it might have been unclear for eligible nurses which of their colleagues matched the inclusion criteria in a similar way as telephone calls to inventory potential participants for the study revealed the advanced practice nursing concept was not clear to several members of the hospital management. Secondly, if the study was discussed among colleagues, some eligible participants

might have felt pressured to forward the link of the questionnaire to non-eligible nurses in order to avoid conflicts with nurses they had to collaborate with in their APN role. Nevertheless, some specialized, not-master educated nurses completed the questionnaire despite not being eligible. These nurses might have participated in the study to increase the visibility of their roles and to avoid "being forgotten about" during a period of national discussion about APN roles. The principal investigator also received emails from non-master specialized nurses to comment on and complain about the focus of the study, being solely on master educated APNs. All of these reasons might also be signs of intra-professional tensions in the nursing profession regarding the implementation of APN roles in Belgian healthcare organisations. That such tensions exist in Belgium was illustrated by the unpublished qualitative study of Goedertier et al. (2018), in which underlying processes for the implementation of advanced practice nurses and specialized nurses in oncology care were examined in hospitals in Flanders. In this study, participants reported that nurses and head nurses perceived them as "luxury nurses" (Goedertier et al., 2018). Literature shows that Belgium would not be the only country in which such intra-professional tensions might occur during discussions on APN role implementation. A growing body of evidence suggests that APN role implementation is influenced by nurses and nursing managers (Anderson, 2017). Several publications mentioned intra-professional resistance, e.g. the lack of team, clinical staff or nursing management understanding and support of the APN role, as a barrier for APN role implementation (DiCenso et al., 2010; Elliott et al., 2016; Sangster-Gormley et al., 2011; Torrens et al., 2019). In a qualitative study examining the acceptance of the APN role in lung cancer care, Serena et al. (2018) found that nurses were concerned about losing part of their traditional role when an APN role for lung cancer patients would be implemented. Additionally, a qualitative study examining the transition experiences of ten newly endorsed NPs in Australia during their first year of practice reported many descriptions of overt and covert expressions of hostility and opposition towards NPs, lost supportive relationships and friendships, and of adversaries instead of allies within the nursing profession (MacLellan et al., 2016). The passive aggressive or dismissive behaviours of nurses, the perceived obstruction regarding NPs' practice led the authors to speak of "the enemy from within" (MacLellan et al., 2016). Similarly, Currie et al. (2010) noted that new nursing roles, such as nurse specialist or nurse consultant roles, could be problematic for nurses remaining in traditional roles. They found that the understanding of such new roles by senior nurses, and their ability to provide developmental support, were limited (Currie et al., 2010). Furthermore, Currie et al. (2010) indicated that new roles are often unsupported by the professional institutions of nursing in terms of regulation and accreditation, as well as professional culture (Anderson, 2017). According to Currie et al. (2010), nurses are culturally rather conservative due to continued subordination to the medical profession. Furthermore, they reported that many nurses were unwilling to move into these new roles, because such roles required a degree of autonomy unfamiliar to nurses (Currie et al., 2010).

Results from the qualitative study described in chapter 3 suggest that similar mechanisms might be present within the midwifery profession. The fact that several not-master educated midwives in consultant or expert positions voiced their concern about master educated midwives potentially taking their jobs in the future, might be an illustration of intra-professional tensions. Another illustration might be found in the fear of some participants that defining some midwives as "advanced practitioners" might result in others feeling inferior. In addition, a participant warned against AMPs taking on the unwanted role of "midwifery obstetricians", thereby impeding the autonomy of other midwives.

Clarification of the APN and AMP role is increased by clear regulation and legislation (Heale & Rieck-Buckley, 2015). Regulation of professional practice or professional legislation grants health professionals the legitimacy for APN and AMP role enactment through registration, certification, a defined scope of practice, authorized clinical tasks and entry requirements (Heale & Rieck-Buckley, 2015). Despite the significance of legislation as a factor enabling APN and AMP role implementation, a legal framework for nurses working in APN positions in Belgium has long been lacking. However, the Law of the 22$^{nd}$ of April 2019 on the modification of the Law of the 10$^{th}$ of May 2015 on the Practice of the Healthcare Professions introduced a legal framework for APNs in the Belgian legislation. This framework could be seen as a major breakthrough in the innovation of healthcare and nursing in Belgium. The new legal framework clarifies the differences between APNs and other nurses, whether they are general or specialized nurses, in two areas: educational requirements and clinical activities of APNs. Although specific criteria for the use of the APN title have to be described in future legislation, it is clear that this will require at least a master's degree in nursing sciences. Additionally, the law stipulates that the APN will be authorized to perform complex nursing care and medical activities to maintain, improve and restore the health of a well-defined, specific group of patients and in clear concertation with a physician and other healthcare professionals. However, the terms "complex nursing care", "a specific group of patients", and "close concertation" need further clarification, as no description of these terms is available in Belgian healthcare legislation. Furthermore, the legal framework provides regulation for the clinical part of APN roles, but not for other role aspects, such as leadership, innovation, and research. Firstly, this could give the impression of stronger legislative support for the NP role rather than CNS roles, despite of the results of the studies in chapter 4 and 5 pointing towards a blended APN role in Belgium, but closer to the CNS role. Secondly, the results of these studies showed that several tasks in the leadership, innovation, and research domain were executed by a limited number of APNs and AMPs. Although the non-execution of some of these activities was associated with APNs and AMPs feeling incompetent to do so, the non-execution of others was associated with working in peripheral hospitals or having a physician as supervisor or funding source. Legislation could support APNs and AMPs in the execution of their full scope of practice, as it might clarify APN and AMP roles for physicians, and decrease interprofessional tensions regarding APNs' and AMPs' role execution. Based on the results of the studies in chapter 4 and

5, APNs in peripheral hospitals could especially benefit from such legislation, as these APNs are even less involved in leadership and research activities than their colleagues in university hospitals. However, as legislation regulating the non-clinical part of APN roles is a regional legal competence in Belgium, the federal Belgian legislator is not qualified to do so. Hence, legislation for all non-clinical advanced practice domains should be issued in the Flemish, Walloon, and Brussels region. This might however increase the change that regional differences arise in the APN legislation, which should be avoided to minimize role unclarity regarding emerging APN roles in Belgium.

Creating a work environment in which APNs and AMPs can develop professionally and execute tasks specifically related to advanced practice is important, especially when APNs and AMPs feel competent to do so. This could enhance APNs' and AMPs' job satisfaction and contribute to employee retention (Lamb et al., 2018; Kilpatrick et al., 2014). The latter is an important goal in Belgium, as nursing care is expected to intensify, and the nurse staffing ratio is far above the European mean. Only Germany and Spain have a higher workload than Belgium as measured by the number of patients per nurse (Van den Heede et al., 2019). In addition, a growing body of evidence illustrates that lower staffing levels and lower nursing educational levels are associated with a higher risk of worse patient outcomes such as patient mortality and hospital-acquired infections (Van den Heede et al., 2019). It is vital that APNs and AMPs are not lost to staff attrition, as they are important for the implementation of evidence-based practices, the introduction or updating of evidence-based procedures, and competency development of staff nurses through guidance and coaching of these nurses in complex care situations.

In addition, the introduction of a legal framework for APNs in Belgium was not accompanied by a similar legal framework for AMP roles. It should be discussed to what extent legislation for AMP roles is desirable and achievable on a federal level in Belgium. Midwives already have a well-defined legal framework that covers autonomous practice for normal pregnancy, childbirth and the postnatal period. Similar to APN roles however, the existing legal framework for midwives is lacking coverage of the non-clinical part of AMP roles. Therefore, legislation for those parts of the AMP roles should be examined on a regional level.

## 3. Methodological considerations

This research has several strengths and limitations that need to be considered. The studies examining the task performance and competency perception level of APNs and AMPs, the time use of APNs, and factors influencing AMP role implementation were the first to be conducted in Flanders and Belgium, allowing a state of affairs to be made while APN roles are still emerging and the implementation of AMP roles is in its infancy. Results from these studies contributed baseline evidence

and can be used to monitor future evolutions in these roles. As the international knowledge on APN and AMP task (non-) execution, competency level and time use in countries with emerging but not yet fully established APN and AMP roles is limited, the studies added to this knowledge and contributed to the comparison of advanced practice roles internationally. Furthermore, the combination of original research regarding AMP role implementation and a comprehensive literature review for the concept analysis provided insight into the core elements of advanced midwifery practice and stakeholders' views on barriers and facilitators for its implementation, which is a good starting point for the development of an implementation strategy. As the international literature on AMP role implementation was scarce, uncovering factors influencing the implementation in Flemish healthcare settings contributed to the limited knowledge internationally.

Despite the strengths of this research, there are several limitations that require consideration. A first limitation is that the scope of the studies in chapters 4 and 5 was restricted to APNs and AMPs working in a hospital setting. Hence, APNs and AMPs in primary care and mental healthcare, and APNs in rehabilitation were not included. Although the exclusion of APNs and AMPs in primary care and mental healthcare limited the generalizability of the study results, the impact of their exclusion is estimated to be rather small. This is due to the limited number of APNs and AMPs that have been identified within these healthcare settings. Future research should however be expanded to include APNs and AMPs in all healthcare settings. As the time use study in chapter 5 was limited to APNs, future research should also focus on the time use of AMPs once their numbers are high enough to avoid high variability due to the small sample size.

Second, the subsets of advanced practitioners working in university and peripheral hospitals in chapters 4 and 5 were unequally distributed, leading to an over-representation of advanced practitioners in university hospitals. This could be attributed to the higher number of advanced practitioners being identified in university hospitals. However, information on an exact number of nurses and midwives working in APN and AMP roles was lacking at the time of the studies, as formal regulation for the registration and certification of APNs and AMPs was not in place and the "advanced practitioner" job title was not protected in Belgium. Since the execution of the study, however, a legal framework for APN roles was introduced in Belgium by the Law of 22 April 2019 on the modification of the Law of 10 May 2015 on the practice of the healthcare professions. The protection of the APN title in Belgian healthcare as a result of the law's publication could facilitate the identification of APNs for future studies. As the law does not apply to midwives and a legal framework for the implementation of AMP roles is still lacking in Belgium, it will remain challenging to identify midwives executing such roles in the future.

Third, APNs' and AMPs' task execution and competency level were examined using self-reported measures. Therefore, the results of the study in chapter 4 could be prone to social desirability bias and a threat to validity. However, the self-reported

measures regarding task execution and competency level in chapter 4 were combined with the more objective method of non-participant observation of APNs' time use in chapter 5.

## 4. Recommendations for policy and practice

Based on the insights of this research, several recommendations for policy and practice can be made. Recommendations that were made in the publications described in chapters 3 to 6 were not repeated in this section, unless they were elaborated on.

It has become clear that APN and AMP roles have not been well established in Belgium. Results of the studies in chapters 4 and 5 showed that many APNs and AMPs in Flanders are not working to their full scope of practice, also especially regarding the domains of leadership and research. Therefore, measures should be taken to improve the implementation of APN and AMP roles in Belgium. As reported in chapter 3, the current fee-for-service financing model of healthcare professionals is one of the already known factors that were seen as an impediment for AMP role implementation due to AMPs being considered a potential financial and professional threat by related disciplines, such as obstetricians. Similar results are found in the literature for the implementation of APN roles (Doetzel et al., 2016). Activities of APNs and AMPs might be seen as a threat primarily when task substitution of physicians is considered. However, the fact that legislation and reimbursement regulations are lacking for the non-clinical activities of APNs and AMPs also challenges APN and AMP role implementation. The lack of established funding mechanisms is a known barrier for the implementation of APN and AMP roles (Begley et al., 2014; Sangster-Gormley et al., 2011). Results from the study in chapter 3 also showed that structural governmental funding is a vital prerequisite for the long-lasting embedment of advanced practitioner roles. If the funding of such positions is left to the voluntary willingness of healthcare organisations, APN and AMP positions might be cut in economically challenging times. Furthermore, interdisciplinary collaboration and team-based care has become increasingly important in healthcare (Campo et al., 2013; Mezzich et al., 2015; Petri, 2010). Therefore, policy makers should investigate alternative financing models for APN and AMP roles, such as episode-of-care payments, bundling payment approaches or comprehensive care payment (Feldhaus et al., 2018; Miller, 2009; OECD, 2016; Weeks et al., 2013). Episode-of-care payment is used when "a single price is payed for all of the services needed by a patient during an entire episode of care" (Miller, 2009). It creates a stimulus for healthcare providers to avoid unnecessary services within the episode of care, while simultaneously giving them the flexibility to decide which services should be provided. In addition, if multiple providers are covered by the same episode-of-care and receiving so called "bundling payments", they are stimulated to coordinate their services (Miller, 2009). If a comprehensive care model is used, one or more healthcare providers receive a single

payment that covers all of healthcare services necessary for the patients during a specific period of time. As the level of healthcare services that is needed can however vary, e.g. by variations in the patients' health and severity of diseases, the payment would be adjusted. Financing models such as episode-of-care payment or comprehensive care payment could function as an incentive for healthcare professionals to share the responsibility for patient care and make clear agreements on task differentiation. The suitability of such financing models should be studied and evaluated for the Belgian healthcare context, e.g. by the Belgian Health Care Knowledge Centre (KCE).

As the implementation of AMP roles is in its infancy, the future success of AMP role implementation will require measures at a policy level. Therefore, a national working group should be installed to explore key factors for developing an effective strategic plan in order to optimize AMP role implementation in Belgium (Schober, 2017), increase the number of AMPs to a critical mass, and discuss the AMP role in the light of a clinical career path for midwives. Such a working group could consist of midwives in academia, AMPs, midwifery directors and managers from university and large non-university hospitals with and without existing AMP roles, representatives from midwifery associations, and representatives from policy advisory boards, such as the Federal Council of Midwives. Although a strategic approach might be complex, it is useful to bring together key stakeholders, and decision-makers to discuss and identify issues that require policy decisions and action, such as the lack of a legal framework and structural funding of such roles, and the absence of a national AMP competency profile (Schober, 2017). The working group could establish legitimacy for the further implementation of AMP roles, determine feasibility, identify support, and discuss desirable outcomes of AMP role implementation (Schober, 2017). As participants mentioned in chapter 3, pioneering projects introducing the role of AMPs should be considered first in university and large non-university hospitals. However, the implementation of a single advanced practitioner role in a healthcare organisation has been described as a barrier for advanced practitioners to enact their leadership role and for successful advanced practitioner implementation in general (Elliott et al., 2016; Sangster-Gormley et al., 2011). As the implementation of several AMP roles in one healthcare organisation might be challenging as mentioned in chapter 3, possibilities for the implementation of AMP roles in hospital networks should be considered. Such locoregional hospital networks have been approved by parliament since the 1st of January 2020 (Law of 28$^{th}$ February 2019 on the modification of the Law of 10$^{th}$ of July 2008 on hospitals and other care facilities regarding clinical networks between hospitals). Similar to AMPs, the locoregional networks could also provide an opportunity for APNs to collaborate within and across their specialty domains. However, as there is little experience with AMP roles in Belgium, best practice models for the implementation of AMP roles from countries in which such roles have been successfully introduced (e.g. Ireland, United Kingdom), should be examined.
Advanced practice nursing frameworks and policies have been developed in several countries (e.g. Canada, Ireland) to facilitate successful APN role implementation and sustainability, and to promote a common understanding of APN roles

among nurses, other healthcare professionals, healthcare organisations, policymakers, and clients / patients (Canadian Nurses Association, 2019). These frameworks could be used as a basis for the discussion about AMP role implementation in the Belgian healthcare context. One of the most comprehensive and practical policy documents about APN and AMP roles was developed by the Irish Department of Health in 2019. It provides a model from graduate to advanced practice, information about the educational pathway to become an APN or AMP, a model for evaluation and the long term sustainability of APN and AMP role implementation, and five clearly defined goals: (1) create a critical mass of APNs/AMPs through a developmental pathway for graduate and specialist nurses and midwives, (2) change the way graduates, specialists and APNs/AMPs are educated and trained, (3) change the utilization and deployment of the nursing and midwifery resource, (4) measure the impact and effectiveness of the new model, (5) implementation (Department of Health, 2019). For each goal, actions to support achieving the goals are described. This policy document could provide valuable guidance for the working group entrusted with the task of developing an AMP implementation policy for the Belgian healthcare system.

## 5. Recommendations for education

Results of the study in chapter 4 showed that the non-execution of several tasks in the domains of leadership, change management and innovation, and research was associated with APNs and AMPs not feeling competent enough to do so. Similar results were found in the unpublished, qualitative study by Goedertier et al. (2018), in which several APNs in hospitals in Flanders indicated that they did not feel sufficiently prepared for the APN role, especially regarding leadership and research skills. Literature also confirms that a lack of clarity and understanding of the leadership and research component of the APN role, as well as a lack of leadership skill development, education and preparation for the role are barriers for APN role enactment (Elliott et al., 2016; Franks & Howarth, 2012; Hourahane et al., 2012). Hence, it is vital that pre-service and in-service programmes that prepare APNs and AMPs for their role sufficiently focus on the development of leadership, change management, and research competencies in order to stimulate the advancement of nursing and midwifery as a discipline and science.

Several interventions are described in the literature to promote APNs' clinical leadership skills. In the study of Leggat et al. (2015), a formal action learning mentoring programme was introduced to develop clinical leadership competencies of NP candidates in the Australian healthcare system. The programme consisted of three face-to-face workshops for mentors and NP candidates including training in mentoring skills and action learning, educational sessions on clinical leadership, opportunities for reflection and feedback, and monthly face-to-face or telephone mentoring meetings for an 18-month period. Results showed that the self-reported leadership practices of the NP candidates improved significantly when they

were paired with senior nurses and experienced NPs (Elliott et al., 2016; Leggat et al., 2015). Similarly, Tran et al. (2019) found that a 1-year leadership programme for APNs including three intensive in-person leaderships retreats, and two monthly distance based and in-person learning activities (e.g. workshops, seminars, team learning, professional development sessions) significantly improved participants leadership competencies.

Mentorship is not only mentioned as a way to improve advanced practitioners' clinical leadership competencies (Leggat et al., 2015; Tran et al., 2019), but it could enhance their writing competencies (Rohan & Fullerton, 2018). Rohan & Fullerton (2018, 2019, 2020) examined methods to enhance APNs writing skills, as such skills are increasingly important for all APNs who are expected to implement evidence-based practice (EBP), formulate evidence based policies and procedures, and communicate best evidence. Their findings suggest that mentorship, peer support, and the use of commonly spoken language may be useful tools for improving writing competencies (Rohan & Fullerton, 2018). Although these interventions were developed and examined within a post-master's Doctor of Nursing Practice programme, they could be considered to stimulate the writing competencies of APNs and AMPs within the Belgian healthcare context.

However, offering mentorship to APNs and AMPs requires the availability of individuals who can adequately assume the role of mentors. It might therefore be useful to consider building academic – practice partnerships between APNs / AMPs and academic advanced practice researchers in the healthcare settings where such partnerships are lacking. Such partnerships have proven to be acceptable, feasible, and effective to educate and mentor APNs on how to lead, implement, and integrate research, quality improvement, and evidence-based activities into their practices (Harbman et al., 2017; Tran et al., 2019). Academic - practice partnerships are already present to a lesser or greater extent in Flanders, primarily between universities and university hospitals. However, it is recommended to examine the extent to which these partnerships exist between universities and peripheral hospitals or primary care settings. As the results in chapters 4 and 5 showed, advanced practitioners in peripheral hospitals could particularly benefit from such partnerships.

The abovementioned measures primarily focused on advanced practitioners that were already in practice as APNs or as APN candidates. However, it is equally important to consider APN pre-service programmes. As mentioned in the discussion section, the Law of the 22$^{nd}$ of April 2019 stipulates that the use of the APN title will require at least a master's degree in nursing sciences. Although academic master programmes for nurses and midwives have existed in Belgium since the 1980s, these programmes are general in nature and were developed to prepare nurses and midwives for many different roles. A more specific education, such as a Master of Science in Nursing and Midwifery with specialization in advanced practice nursing or advanced midwifery practice, could facilitate the transition of nurses and midwives to advanced roles, enhance the process of professional socialization (Ares, 2014), and emphasize the importance of leadership, research, and innovation competencies for advanced practice purposes. Furthermore, a specific education enhances the visibility of APN and AMP roles to potential students, healthcare professionals, and other stakeholders (Ares, 2014). Additionally, a more specific

programme could include practice and clinical experiences through internships. Such internships could facilitate the professional socialization of future APNs and AMPs (France, 2006), and provide concrete examples of effective leadership, innovation, and research strategies. In addition, internships could boost the clinical expert part of the APN and AMP role, for example by increasing the knowledge of pharmacology, pathophysiology, and skill acquisition in physical assessments. However, the implementation of internships requires the availability of clinical supervisors who have the necessary competencies to take on such roles.

## 6. Recommendations for further research

Results from the study in chapter 3 showed that documenting the added value of AMP roles was regarded a prerequisite for gaining support to implement such roles in Flanders. These results are supported by the recommendations of Bryant-Lukosius et al. (2004), who stated that rigorous evaluation of APN roles related to predetermined outcome-based goals is essential for improving the implementation of APN roles. Therefore, further research should focus on clinical, organisational, and professional outcomes of APN and AMP care both internationally and nationally, as such research has not been executed in Belgium and is also to a lesser extent evaluated internationally. This will however be challenging, as the unique contribution of advanced practitioners might be difficult to investigate in an approach to care that increasingly focuses on interdisciplinary collaboration and team-based interventions (Campo et al., 2013; Mezzich et al., 2015; Petri, 2010).

International literature as well as findings from the study in chapter 3 also showed that the implementation of advanced practitioner roles is complex (Casey et al., 2019). Frameworks for the implementation of APN roles recommend the identification of role barriers and facilitators as a vital step in the implementation process (Bryant-Lukosius & DiCenso, 2004; Ryley & Middleton, 2016). The extent to which such barriers and facilitators have been inventoried for APN and AMP roles in the Belgian healthcare context is limited. One of the barriers for the implementation of advanced practitioner roles is professional identity. Emerging evidence suggests that professional identity might contribute to reduced acceptance and utilization of APN roles (Currie et al., 2010; McNeil et al., 2013). However, research exploring the relationship between professional identity and APN roles, and examining the construction of professional identity between inter- and intra-professional groups remains scarce (Anderson, 2017). It might therefore be useful in future research to explore the impact of professional identity of the broader nursing and midwifery community (e.g. staff nurses and midwives, head nurses and midwives, specialized nurses and midwives) on the implementation of APN and AMP roles both internationally and in the Belgian healthcare context.

Additionally, despite several international studies identifying factors influencing the implementation of advanced practice roles, such as organisational, nursing and physician support, role confusion, physician remuneration issues, and national accreditation requirements (Doetzel et al., 2016; Elliott et al., 2016; Wisur-Hokkanen et al., 2015), none have quantified and hierarchically ranked these factors. In addition, Maier et al. (2017) highlight a need to pursue more cross-country research to identify systemic barriers and enablers to the uptake of advanced practice nursing. Therefore, future research should focus on cross-country comparisons of key factors for the successful implementation of APN and AMP roles. However, a major challenge regarding cross-country research is the absence of an international consensus definition of both advanced practice nursing and advanced midwifery practice, and the lack of an international consensus regarding registration and certification criteria. This makes it difficult to identify nurses and midwives in APN and AMP roles, especially in countries with emerging advanced practitioner roles, in which a formal regulatory body or certification board is absent.

Finally, due to the publication of the Law of the 22$^{nd}$ of April 2019, major legislative changes are underway for APNs in Belgium. The effect of these changes on the implementation and execution of APN roles should be monitored. One of the methods to do so is to examine the tasks, competencies, and time use of APNs on a regular basis. The studies reported in chapter 4 and 5 could thereby serve as baseline measurements. Additionally, advanced practitioners in hospitals in Flanders are relatively young and have limited APN / AMP experience, as results from the study reported in chapter 4 showed. Therefore, it might be useful to examine the extent to which their role execution changes over time using a longitudinal study design instead of the cross-sectional design used in chapters 4 and 5.

# 7. Conclusion

The introduction and development of "Advanced Practice Nursing" was seen as one of the most important developments in nursing during the twentieth century. Evidence on the contribution of APNs and AMPs on clinical, professional, and organisational healthcare outcomes is growing internationally. However, little was known about the task execution and competency level of APNs and AMPs in Belgium, APNs' professional time use, and the conditions for the implementation of AMP roles in Belgian healthcare settings. Results of this dissertation showed that APNs and AMPs in university and non-university hospitals did not work according to their full scope of practice. Hence, role optimization of APNs and AMPs in Belgian healthcare settings is recommended, especially regarding the advanced practice domains of leadership, change management and innovation, and research. These domains are particularly important as they directly contribute to the advancement of nursing and midwifery as a profession and science. Several measures for the optimization of APNs' and AMPs' role enactment were suggested. As task non-execution was associated with feelings of incompetence for several tasks in the leadership and research domain, the development of in-service training programmes, the optimization of pre-service programmes, and academic-practice partnerships could be considered. However, results also highlighted that several tasks were performed by few APNs/AMPs despite many feeling competent. Supervisors and nursing and midwifery managers could play an important part in facilitating APNs'/AMPs' role development, especially regarding tasks executed by few participants. Furthermore, the current fee-for-service financing model of healthcare professionals was identified as a barrier for APN and AMP role implementation. Therefore, policy makers should consider alternatives as incentives for the implementation of APN and AMP roles, such as bundled payment approaches.

In addition, this dissertation uncovered indications suggesting role unclarity, intra- and inter-professional tensions regarding APN and AMP implementation, role conflict, and limited acceptance of APN and AMP roles in healthcare organisations in Flanders. As clarification of advanced practitioner roles is increased by clear regulation and legislation, the new legal framework for APNs in the Belgian legislation could be a major breakthrough in the innovation of healthcare and nursing in Belgium. However, this legal framework was not accompanied by a similar legal framework for AMP roles. Besides the lack of legislation, this dissertation identified multiple factors on a governmental, healthcare organisational, and workforce level that were perceived to affect AMP role implementation. As results illustrated the complexity of the implementation process for such roles in Belgium, the development of a well-thought-out implementation plan with the involvement of all relevant stakeholders is vital. Therefore, the establishment of a national working group is suggested to develop a strategic plan for the implementation of AMP roles in Belgium and to bring together key stakeholders and decision-makers for the discussion and identification of issues that require policy decisions and action.

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## SUMMARY

The introduction and development of "Advanced Practice Nursing" is seen as one of the most important developments in nursing during the twentieth century. Since its first introduction in the United States, an increasing number of countries have implemented advanced practitioner roles. Evidence on the contribution of advanced practice nurses (APNs) and advanced midwife practitioners (AMPs) on clinical, professional, and organisational healthcare outcomes is growing. Yet, APN and AMP roles have not been well established in Belgium, despite the availability of academic master's programmes for nurses and midwives since the 1980s and the unofficial introduction of APN roles in the mid-2000s. Moreover, the implementation of AMP roles could even be described as in its infancy in Belgium, although several elements described in this dissertation support the relevance of AMP role implementation in this country as much as in others. With the intention to inform and substantiate further APN and AMP role implementation in Belgium, this dissertation has led to a better understanding of advanced midwifery practice (chapter 2) and factors influencing the implementation of AMP roles (chapter 3). Furthermore, the dissertation aimed to contribute to the insight into the content of APN and AMP roles in Flanders by examining their task performance, competency level (chapter 4), and professional time use (chapter 5).

Advanced midwife practitioner roles are relatively new and their implementation has internationally been less widespread compared to APN roles. An international consensus definition of advanced midwifery practice was lacking, despite the identification of several essential attributes, such as autonomous and expert practice, clinical and professional leadership, and research. This dissertation provided a definition as a starting point for international discussion and consensus. Similar to advanced practice nursing, the results of the concept analysis showed that there is a wide variety in the emergence, titles, roles, and scope of practice of AMPs as these roles are implemented in country-specific healthcare contexts. Yet, the international literature that discusses implementation processes of AMP roles is scarce and literature from related healthcare disciplines such as nursing shows that the implementation of advanced practitioner roles is complex. Therefore, factors influencing the implementation of AMP roles in Flanders were examined in this dissertation. Multiple factors on a governmental, healthcare organisational, and workforce level were found to affect the implementation process. This illustrates its complexity in the Belgian healthcare system. Budgetary constraints on a governmental and healthcare organisational level were mentioned as main barriers for role implementation. The current fee-for-service financing model of healthcare professionals was also seen as an impediment, as the implementation of AMP roles could be considered a financial and professional threat by related disciplines, such as obstetricians. Healthcare managers' and midwives' attitudes towards these roles were also considered essential, highlighting the need for an astute implementation plan involving all relevant stakeholders. Such a plan should also take into consideration the specificities of midwifery, as participants warned against automatically transferring the advanced practice nursing concept to midwifery due to

differences in legislation, autonomy, and the limited number of midwifery care domains. Documenting the added value of AMP roles was regarded a prerequisite for gaining support to implement such roles, while healthcare organisations' heightened focus on quality improvement and client safety was seen as an implementation opportunity. Results showed that the success rate of future AMP role implementation was considered higher in university hospitals than in peripheral hospitals, making the former more suitable for pilot projects for AMP role implementation. Several reasons underpinned this point of view: scientific research being one of the cornerstones of university hospitals' mission statements; more advanced care pathway and evidence-based care implementation, and a greater need for further specialization of obstetricians. The latter was believed to enhance the need for midwives in new and expanded roles, although it was perceived vital that role expansion was considered in areas of care that were helpful to medical specialists.

This dissertation has also augmented the insight into the content of APN and AMP roles in Flanders. Although examinations of APNs' practice profile had been executed internationally, the task performance and competency level of APNs and AMPs in Flanders, and APNs' professional time use was unclear. Therefore, this dissertation examined APNs' and AMPs' task performance, competency level, and factors associated with task non-execution (chapter 4). In addition, a time and motion study investigated the time use of APNs (chapter 5). Although results showed that APNs in Flanders execute a blended role on the clinical nurse specialist and nurse practitioner continuum, their job content leans more towards the clinical nurse specialist role. Findings from the third study in this dissertation (chapter 4) showed that APNs and AMPs in Flanders executed tasks in all of the following advanced practice domains: clinical expertise, guidance and coaching, consultation and consultancy, multidisciplinary cooperation and coordination of care, clinical and professional leadership, change management and innovation, research, and ethical decision-making. However, APNs and AMPs in university hospitals were more likely than their colleagues in peripheral hospitals to execute tasks in two domains: clinical expertise, guidance and coaching, and research. In addition, advanced practitioners who felt incompetent for tasks in the domains of multidisciplinary cooperation and coordination of care, and ethical decision-making were less likely to execute tasks in these domains. On the other hand, several tasks were performed by few APNs and AMPs despite many feeling competent. Remarkably, five of ten tasks performed by fewest participants belonged to the leadership domain. A minority of APNs and AMPs participated in policy meetings on a hospital (department) level, extended and maintained contacts with international professional associations an patient organisations, or participated in national and international advisory boards or governmental working groups. Findings from the time and motion study in this dissertation (chapter 5) confirmed that the execution of leadership tasks took up a small amount of APNs' professional time, as under 5% was used for leadership activities. Furthermore, the current fee-for-service financing model of healthcare professionals was identified as a barrier for APN and AMP role implementation. In addition, this dissertation uncovered indications suggesting role

unclarity, intra- and inter-professional tensions regarding APN and AMP implementation, role conflict, and limited acceptance of APN and AMP roles in healthcare organisations in Flanders.

Based on the results of this dissertation, it is argued that APNs and AMPs do not optimally fulfill their role in the advanced practice domains of leadership, change management and innovation, and research. Additionally, APNs devoted almost no time to the ethical decision-making facilitator role. However, stimulating advanced practitioners to fully enact their leadership role is vital because they are considered important resources for building leadership capacity, introducing innovations, and advancing nursing and midwifery both as professions and as scientific disciplines.

This dissertation contains several suggestions for the optimization of APNs' and AMPs' role enactment. As task non-execution was associated with feelings of incompetence for several tasks in the leadership and research domain, the development of mentoring programmes, in-service training programmes, the optimization of pre-service programmes, and academic-practice partnerships could be considered. In addition, supervisors and nursing and midwifery managers could play an important part in facilitating APNs'/AMPs' role development, especially regarding tasks executed by few participants despite many feeling competent. Furthermore, policy makers should consider alternatives for the current fee-for-service financing model as incentives for the implementation of APN and AMP roles, such as bundled payment approaches.

The new legal framework for APNs, established in the Belgian legislation by the Law of the 22$^{Nd}$ of April 2019, could be a major breakthrough in the innovation of healthcare and nursing in Belgium, as this framework will contribute to the clarification of APNs in Belgium. However, this legal framework was not accompanied by a similar legal framework for AMP roles. As results illustrated the complexity of the implementation process for such roles in Belgium, the establishment of a national working group is suggested to develop a strategic plan for the implementation of AMP roles in Belgium and to bring together key stakeholders and decision-makers for the discussion and identification of issues that require policy decisions and action.

## SAMENVATTING

De introductie en ontwikkeling van "Advanced Practice Nursing" wordt gezien als een van de belangrijkste ontwikkelingen in de verpleegkunde in de twintigste eeuw. Sinds de eerste introductie in de Verenigde Staten heeft een toenemend aantal landen geavanceerde rollen voor verpleegkundigen en vroedvrouwen geïmplementeerd. Evidentie m.b.t. de impact van verpleegkundig (APN) en vroedvrouw-specialisten (AMP) op klinische, professionele en organisatorische gezondheidszorguitkomsten groeit. Functies voor verpleegkundig en vroedvrouw-specialisten zijn niet goed ingeburgerd in België, ondanks de beschikbaarheid van academische masteropleidingen voor verpleegkundigen en vroedvrouwen sinds de jaren 1980 en de onofficiële introductie van verpleegkundig specialisten in het midden van de jaren 2000. Bovendien kan de implementatie van AMP-rollen zelfs worden beschreven als in de kinderschoenen in België, hoewel verschillende elementen, die in dit proefschrift worden beschreven, de relevantie van dergelijke rollen in dit land evenzeer ondersteunen als in andere landen. Met de bedoeling om verdere implementatie van rollen voor verpleegkundig en vroedvrouw-specialisten in België te informeren en te onderbouwen, heeft dit proefschrift geleid tot een beter begrip van de inhoud van het concept “vroedvrouw-specialist” (hoofdstuk 2) en van factoren die de implementatie van dergelijke rollen beïnvloeden (hoofdstuk 3). Verder was het proefschrift bedoeld om bij te dragen tot inzicht in de inhoud van het takenpakket, het competentieniveau (hoofdstuk 4) en het professioneel tijdgebruik (hoofdstuk 5) van verpleegkundig en vroedvrouw-specialisten.

De rol van vroedvrouw-specialist is relatief nieuw en de implementatie van deze rollen is internationaal minder wijdverspreid vergeleken met rollen van verpleegkundig specialisten. Een internationale consensusdefinitie van geavanceerde vroedkundige praktijkvoering ontbrak, ondanks de identificatie van verschillende essentiële kenmerken, zoals autonome en deskundige praktijkvoering, klinisch en professioneel leiderschap en onderzoek. Dit proefschrift formuleerde een definitie als uitgangspunt voor internationale discussie en consensus. Vergelijkbaar met geavanceerde verpleegkundige praktijkvoering toonden de resultaten van de conceptanalyse aan dat er een grote verscheidenheid is in de opkomst, titels, rollen en reikwijdte van praktijkvoering van vroedvrouw-specialisten, omdat deze rollen worden geïmplementeerd in zorgcontexten met kenmerken die eigen zijn aan het land. Toch is de internationale literatuur waarin implementatieprocessen van AMP-rollen worden besproken schaars en blijkt uit literatuur van gerelateerde gezondheidszorgdisciplines zoals de verpleegkunde dat de implementatie van APN-rollen complex is. Daarom werden in dit proefschrift factoren onderzocht die de implementatie van AMP-rollen in Vlaanderen beïnvloeden. Meerdere factoren op het niveau van de overheid, de gezondheidszorg en de beroepsgroep bleken het implementatieproces te beïnvloeden. Dit illustreert de complexiteit ervan in het Belgische gezondheidszorgsysteem. Budgettaire beperkingen op het niveau van de overheid en de gezondheidszorg werden genoemd als belangrijkste belemmeringen voor de implementatie van AMP-

rollen. Het huidige prestatiegestuurde financieringsmodel van de gezondheidszorg werd ook als een belemmering gezien, omdat de implementatie van AMP-rollen door verwante disciplines, zoals gynaecologen, als een financiële en professionele bedreiging kon worden beschouwd. De attitude van zorgmanagers en vroedvrouwen ten opzichte van deze rollen werd ook als essentieel beschouwd, wat de noodzaak onderstreept van een goed uitgewerkt implementatieplan waarbij alle relevante belanghebbenden betrokken zijn. Een dergelijk plan moet ook rekening houden met de specifieke kenmerken van vroedkunde, omdat deelnemers waarschuwden voor het automatisch overbrengen van het concept van verpleegkundig specialisten naar de vroedkunde. Dit blijkt niet rechtstreeks mogelijk, o.a. omwille van verschillen in wetgeving, autonomie en het beperkte aantal vroedkundige zorgdomeinen in vergelijking met de verpleegkunde. Het documenteren van de toegevoegde waarde van AMP-rollen werd beschouwd als een voorwaarde om ondersteuning te krijgen bij het implementeren van dergelijke rollen, terwijl de verhoogde focus van zorgorganisaties op kwaliteitsverbetering en klantveiligheid werd gezien als een opportuniteit. De resultaten toonden aan dat het succespercentage van toekomstige implementatie van AMP-rollen in universitaire ziekenhuizen hoger werd geacht dan in perifere ziekenhuizen, waardoor de eerste geschikter werden bevonden voor proefprojecten voor de implementatie van AMP-rollen. Verschillende redenen werden aangehaald om dit standpunt te onderbouwen: wetenschappelijk onderzoek is een van de hoekstenen van de missieverklaringen van universitaire ziekenhuizen; er is een hogere mate van zorgpadontwikkeling en implementatie van evidence-based practice, en een grotere behoefte aan verdere specialisatie van gynaecologen. Men geloofde dat deze laatste reden de behoefte aan vroedvrouwen in nieuwe en uitgebreide rollen vergroot, hoewel het van vitaal belang werd geacht dat roluitbreiding werd overwogen in zorggebieden die nuttig waren voor arts-specialisten.

Dit proefschrift heeft ook het inzicht in de inhoud van APN- en AMP-rollen in Vlaanderen vergroot. Hoewel het praktijkprofiel van verpleegkundig specialisten internationaal reeds was onderzocht, waren de activiteiten, het competentieniveau en het professioneel tijdsgebruik van verpleegkundig- en vroedvrouw-specialisten in Vlaanderen onduidelijk. Hoewel de resultaten aantoonden dat verpleegkundig specialisten in Vlaanderen een gemengde rol spelen t.o.v. het “clinical nurse specialist” versus “nurse practitioner” continuüm, neigt hun functie-inhoud meer naar de klinische verpleegkundig specialisten-rol. Bevindingen uit de derde studie in dit proefschrift (hoofdstuk 4) toonden aan dat verpleegkundig en vroedvrouwen-specialisten in Vlaanderen taken uitvoerden in alle volgende geavanceerde praktijkdomeinen: klinische expertise, begeleiding en coaching, consultatie en consultancy, multidisciplinaire samenwerking en coördinatie van zorg, klinisch en professioneel leiderschap, verandermanagement en innovatie, onderzoek en ethische besluitvorming. Verpleegkundig en vroedvrouw-specialisten in universitaire ziekenhuizen hadden echter meer kans dan hun collega's in perifere ziekenhuizen om taken uit te voeren in twee domeinen: klinische expertise, begeleiding en coaching, en onderzoek. Bovendien waren verpleegkundig en vroedvrouw-specialisten minder geneigd om

taken op het gebied van multidisciplinaire samenwerking en zorgcoördinatie en van ethische besluitvorming uit te voeren, wanneer zij zich hiervoor onvoldoende competent voelden. Anderzijds werden verschillende taken uitgevoerd door slechts een beperkt aantal verpleegkundig en vroedvrouw-specialisten, ondanks dat velen zich competent voelden. Opvallend was dat vijf van de tien taken die door de minste deelnemers werden uitgevoerd tot het leiderschapsdomein behoorden. Een minderheid van verpleegkundig en vroedvrouw-specialisten nam deel aan beleidsvergaderingen op ziekenhuis- of afdelingsniveau, verlengde en onderhield contacten met internationale beroeps- of patiëntenorganisaties, of nam deel aan nationale en internationale adviesraden of overheidswerkgroepen. Bevindingen uit de studie waarin het professionele tijdsgebruik werd gemeten (hoofdstuk 5), bevestigden dat de uitvoering van leiderschapstaken en -activiteiten minder dan 5% van de tijd in beslag nam. Bovendien werd het huidige prestatiegestuurde financieringsmodel van de Belgische gezondheidszorg beschouwd als een barrière voor de implementatie van rollen voor verpleegkundig en vroedvrouw-specialisten. Dit proefschrift legde bijkomend indicaties bloot die suggereren dat er onhelderheid is m.b.t. deze rollen, dat er intra- en interprofessionele spanningen zijn m.b.t. de implementatie van APN- en AMP-rollen, dat er mogelijks sprake is van rolconflict, en dat APN- en AMP-rollen in gezondheidszorgorganisaties in Vlaanderen slechts in beperkte mate aanvaard zijn.

Op basis van de resultaten van dit proefschrift kan worden beargumenteerd dat verpleegkundig en vroedvrouw-specialisten hun rol in de geavanceerde praktijkdomeinen leiderschap, verandermanagement en innovatie en onderzoek niet optimaal vervullen. Bovendien besteedden verpleegkundig specialisten bijna geen tijd aan de rol van facilitator van ethische besluitvorming. Het stimuleren van verpleegkundig en vroedvrouw-specialisten tot het volledig opnemen van hun leiderschapsrol is echter van vitaal belang omdat ze worden beschouwd als belangrijke sleutelfiguren voor het opbouwen van leiderschapscapaciteit, het introduceren van innovaties en voor de vooruitgang van de verpleeg- en vroedkunde, zowel als beroep als als wetenschappelijke discipline.

Dit proefschrift bevat verscheidene suggesties voor het optimaliseren van de rolinvulling door verpleegkundig en vroedvrouw-specialisten. Omdat het niet uitvoeren van taken in het leiderschaps- en onderzoeksdomein werd geassocieerd met gevoelens van incompetentie, is het aangewezen dat mentorschapsprogramma's en in-service trainingsprogramma's worden ontwikkeld. Bijkomend is het aangewezen om bestaande pre-service masterprogramma's te optimaliseren en moeten partnerschappen tussen de praktijk en de academische wereld worden overwogen. Verder kunnen leidinggevenden en verpleegkundig en vroedvrouw-managers een belangrijke rol spelen in de ontwikkeling van de verpleegkundig- en vroedvrouw-specialistenrol, vooral met betrekking tot taken waarvoor veel specialisten zich competent voelen maar die weinig worden uitgevoerd. Beleidsmakers zouden alternatieven voor het huidige prestatiegestuurde financieringsmodel,

zoals bijvoorbeeld enveloppefinanciering, in overweging moeten nemen om de implementatie van rollen voor verpleegkundig- en vroedvrouw-specialisten te ondersteunen.

Het nieuwe juridisch kader voor verpleegkundig specialisten, dat in de Belgische wetgeving verankerd werd door de Wet van 22 april 2019, kan een doorbraak betekenen in de innovatie van de gezondheidszorg en de verpleegkunde in België. Dit wettelijk kader zal immers bijdragen tot de verheldering van verpleegkundig-specialistenrollen in België. Het juridisch kader voor verpleegkundig specialisten werd echter niet gevolgd door een gelijkaardig wettelijk kader voor vroedvrouw-specialisten. Aangezien bevindingen in dit proefschrift de complexiteit van de implementatie van dergelijke rollen in België aantonen, wordt voorgesteld om een nationale werkgroep op te richten. Het doel van deze werkgroep is het samenbrengen van belanghebbenden en sleutelfiguren met beslissingsbevoegdheid om een strategisch plan voor de implementatie van vroedvrouw-specialistenrollen in België te ontwikkelen door het bespreken en identificeren van (knel)punten die beleidsbeslissingen en -acties vereisen.

# CURRICULUM VITAE

## Personalia

Régine Goemaes (°1976) has a professional background in midwifery practice, and in midwifery and nursing education and research. After finishing her secondary school (Latin maths, Visitatiehumaniora, Gent), she obtained a Bachelor degree in Midwifery (Katholieke Hogeschool voor Gezondheidszorg Gent, 2000), a master degree in Nursing and Midwifery (Ghent University, 2014) and an academic teaching degree in Health Sciences (Ghent University, 2016).

Régine is a registered midwife with a background in prenatal, perinatal, postnatal, and neonatal care. In 2000, she started to work as a midwife at Jan Palfijn Hospital in Ghent. Between 2002 and 2009, she worked on maternity wards in two Norwegian hospitals. In 2009, she started working as a scientific staff member of the Flemish Midwives Association (VBOV). In 2011, she became an assistant head midwife at the Women's Clinic of Ghent University Hospital. In 2014, she started her PhD trajectory on advanced midwifery practice and advanced practice nursing in the University Centre for Nursing and Midwifery at Ghent University. She was also the vice president of the Flemish Midwives Association between 2014 and 2018. Since 2018, Régine combines the position of academic research assistant and PhD candidate at Ghent University with the position of managing director of the Flemish Study Centre for Perinatal Epidemiology in Brussels.

## Publications

### *Articles in international peer-reviewed journals (science citation indexed)*

**Goemaes, R.,** Beeckman, D., Verhaeghe, S., & Van Hecke, A. (2020). Sustaining the quality of midwifery practice in Belgium: challenges and opportunities for advanced midwife practitioners. *Midwifery,* Jul 5;89:102792. doi: 10.1016/j.midw.2020.102792. Advanced online publication.

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# ADDENDA

**Addendum 1** Results for self-reported competency, task performance, task non-execution, and for multivariate binary logistic regression analysis for task non-execution

| | | | | Independent variables | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Task (dependent variable)** | **Competent** | **Do** | **Do not** | **Type of healthcare setting[a]** | **Position appointment percentage[b]** | **Number of years of APN/AMP' experience[c]** | **Competence perception level[d]** | **Financing source[e]** | **Type of hierarchical supervisor[f]** |
| | **N (%)** | **N (%)** | **N (%)** | **Odds ratio** | **Odds ratio** | **Odds ratio** | **Odds ratio** | **Odds ratio** | **Odds ratio** |
| **Clinical expertise, and expert guidance and coaching** | | | | | | | | | |
| Advance own expertise (e.g. by following internal / external training / participation in study days, symposia, reading literature …) | 63 (100) | 63 (100) | 0 (0.0) | NC | NC | NC | NC | NC | NC |
| Supervision / intervision with colleagues advanced practitioners (e.g. coaching sessions) | 57 (91.9) | 48 (76.2) | 15 (23.8) | 5.31* | NA | 2.68 | NA | NA | 3.31 |
| Supervision / intervision with other healthcare professionals | 63 (100) | 56 (88.9) | 7 (11.1) | NA | NA | NA | NC | NA | 0.26 |
| Expertise advancement of nurses/midwives <u>in</u> your hospital (e.g. bedside teaching, training, instructions) | 60 (96.8) | 59 (95.2) | 3 (4.8) | NA | NA | NA | NA | NA | NA |
| Expertise advancement of other healthcare professionals <u>in</u> your hospital (e.g. on the job training, instructions) | 57 (93.4) | 48 (77.4) | 14 (22.6) | 5.93* | NA | 3.80 | 6.33 | NA | 0.43 |
| Expertise advancement of nurses/midwives <u>outside</u> your hospital (e.g. on the job training, instructions)[α] | 55 (90.2) | 41 (66.1) | 21 (33.9) | 15.98** | NA | 1.64 | 5.41 | NA | 2.72 |
| Expertise advancement of other healthcare professionals <u>outside</u> your hospital (e.g. bedside teaching, training, instructions) | 45 (75.0) | 23 (37.1) | 39 (62.9) | 4.15* | NA | 1.53 | NA | NA | 2.31 |
| Coach other healthcare professionals and nursing/midwifery experts, e.g. specialized nurses | 53 (89.8) | 39 (63.9) | 22 (36.1) | NA | NA | 0.28* | NA | NA | NA |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Nurse/midwife consultations and consultancy** | | | | | | | | | |
| Content development of nurse consultations | 53 (89.8) | 40 (65.6) | 21 (34.4) | NA | 2.44 | NA | NA | 0.35 | NA |
| Practical organization of nurse consultations | 52 (86.7) | 40 (65.6) | 21 (34.4) | NA | 1.87 | 2.11 | 5.21 | NA | 2.39 |
| Enter a therapeutic / treatment relationship with the patient | 55 (91.7) | 57 (93.4) | 4 (6.6) | NA | 6.00 | NA | NA | NA | NA |
| (Medical) history taking in preparation of physician consultations | 52 (85.2) | 36 (59.0) | 25 (41.0) | NA | 2.34 | 1.84 | NA | NA | NA |
| Psychosocial history taking | 53 (86.9) | 46 (75.4) | 15 (24.6) | NA | NA | 2.00 | 37.39* | NA | NA |
| Perform physical examination | 43 (70.5) | 32 (52.5) | 29 (47.5) | 0.55 | 1.63 | NA | 17.28* | NA | 0.34 |
| Order additional patient examinations / tests autonomously | 38 (64.4) | 22 (36.1) | 39 (63.9) | NA | 4.97* | NA | 27.41* | NA | 2.65 |
| Order additional patient examinations / tests supervised by / in consultation with a physician | 50 (82.0) | 43 (70.5) | 18 (29.5) | NA | 6.55* | NA | 27.95* | NA | NA |
| Interpretation of additional patient examinations / tests | 48 (80.0) | 33 (54.1) | 28 (45.9) | NA | 6.18* | NA | 32.71* | NA | NA |
| Discuss medical information (e.g. results, treatment options) with the patient or his/her family | 48 (80.0) | 41 (67.2) | 20 (32.8) | NA | 8.65* | 2.19 | NA | 0.56 | NA |
| Guide the patient / family to make choices in the treatment (including possible alternatives) | 56 (93.3) | 52 (85.2) | 9 (14.8) | NA | NA | 2.82 | NA | NA | 4.16 |
| Prescription of medication – supervised / via standing order | 31 (52.5) | 14 (23.0) | 47 (77.0) | NA | 0.10* | NA | NA | NA | NA |
| Develop educational material for patients / family / carers | 57 (95.0) | 57 (93.4) | 4 (6.6) | NA | NA | NA | 112.00* | NA | NA |
| Provide information and advice to patients | 60 (98.4) | 61 (100) | 0 (0.0) | NC | NC | NC | NC | NC | NC |
| Provide information and advice to family / carers | 60 (98.4) | 59 (96.7) | 2 (3.3) | NA | NA | NA | NA | NA | NA |
| Provide information and advice to other healthcare providers involved in the patient's care (e.g. home healthcare providers) | 58 (96.7) | 54 (88.5) | 7 (11.5) | NA | NA | 3.31 | 7.25 | NA | NA |
| Increase the support of the patient's coping mechanisms | 60 (98.4) | 58 (95.1) | 3 (4.9) | NA | NA | NA | NA | NA | NA |
| Guide family / carers | 52 (92.9) | 45 (80.4) | 11 (19.6) | NA | NA | NA | 16.50* | NA | NA |
| Make home visits | 25 (44.6) | 3 (5.4) | 53 (94.6) | NA | NA | NA | NA | NA | NA |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Targeted referral of patients to other healthcare providers | 56 (91.8) | 51 (83.6) | 10 (16.4) | 2.33 | NA | NA | NA | NA | NA |
| Specific performance of triage of patients in care processes (e.g. determine as APN which treatment / care pathway a patient should follow) | 43 (71.7) | 26 (42.6) | 35 (57.4) | NA | NA | 0.52 | NA | NA | NA |
| **Multidisciplinary cooperation and coordination of care** | | | | | | | | | |
| Registration of patient information in patient records | 56 (93.3) | 55 (91.7) | 5 (8.3) | 2.09 | 10.79 | NA | 14.65 | NA | NA |
| Report on treatment and care | 60 (100) | 59 (98.3) | 1 (1.7) | NA | NA | NA | NC | NA | NA |
| Evaluate the care and treatment plan | 58 (96.7) | 53 (88.3) | 7 (11.7) | NA | 0.34 | NA | NA | 2.25 | NA |
| Adjust the care and treatment plan | 58 (96.7) | 52 (86.7) | 8 (13.3) | NA | 0.23 | NA | NA | NA | NA |
| Referral of patients to doctors for treatment and care | 55 (93.2) | 53 (88.3) | 7 (11.7) | NA | NA | NA | NA | NA | NA |
| Referral of patients to nurses/midwives and paramedics for treatment and care | 56 (94.9) | 55 (91.7) | 5 (8.3) | NA | NA | NA | NA | 0.18 | NA |
| Participate in multidisciplinary / interdisciplinary team meetings | 56 (94.9) | 54 (90.0) | 6 (10.0) | 4.67 | NA | NA | 13.42 | NA | 1.91 |
| Coordinate patients' care provision | 53 (89.8) | 45 (75.0) | 15 (25.0) | 4.14* | NA | 1.61 | NA | NA | NA |
| Coordinate dismissal management for patients | 51 (86.4) | 37 (61.7) | 23 (38.3) | NA | 3.97* | NA | NA | 0.35 | NA |
| Function as a point of contact for all relevant care providers | 55 (93.2) | 53 (88.3) | 7 (11.7) | NA | 2.82 | NA | NA | NA | NA |
| (Be involved in) the development of care pathways | 52 (86.7) | 41 (68.3) | 19 (31.7) | NA | NA | 2.20 | 22.21* | NA | NA |
| **Ethical decision-making** | | | | | | | | | |
| Signal domain-specific ethical conflicts in patients | 52 (89.7) | 51 (85.0) | 9 (15.0) | 3.49 | NA | NA | 6.85 | NA | NA |
| Participate in patient discussion meetings with a potential ethical conflict | 48 (82.8) | 40 (66.7) | 20 (33.3) | 4.10* | NA | NA | 6.72* | NA | 3.45 |
| **AMP only tasks** | | | | | | | | | |
| Prescription authority | NC | 0 (0.0) | 5 (100) | NC | NC | NC | NC | NC | NC |
| Pelvic floor re-education | NC | 1 (20.0) | 4 (80.0) | NC | NC | NC | NC | NC | NC |
| Functional ultrasound during pregnancy | NC | 1 (20.0) | 4 (80.0) | NC | NC | NC | NC | NC | NC |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Inform the patient in the context of scientific research | NC | 3 (60.0) | 2 (40.0) | NC | NC | NC | NC | NC | NC |
| Make arrangements with healthcare providers about the division of tasks and responsibilities | NC | 4 (80.0) | 1 (20.0) | NC | NC | NC | NC | NC | NC |
| Signaling ethical problems of midwifery colleagues or other healthcare professionals | NC | 3 (60.0) | 2 (40.0) | NC | NC | NC | NC | NC | NC |

[†]The first authors translated the instrument from Dutch into English for publication purposes only. No validation of the translation was performed.

[‡]APN: advanced practice nurse; AMP: advanced midwife practitioner

Reference categories: [(a)] working in a peripheral hospital; [(b)] position appointment percentage ≤ 50%; [(c)] number of years of work experience as an advanced practitioner ≤ 5 years; [(d)] feeling incompetent for task execution; [(e)] financing source is a doctor or medical head of department; [(f)] a doctor or medical head of department is (one of the) hierarchical supervisor(s) of the APN/AMP.

[¶]NA (not applicable) due to $p \geq 0.25$ for independent variable in univariate logistic regression analysis.

[§]NC (not calculated) due to the low frequency of the independent variable.

*$p < 0.05$; **$p < 0.001$

**Addendum 2** Diary

Code for identification of the APN[†]:

Observation date:

Start time of the working day: End of the working day:

| **Time:** | **Description of activity:** |
|---|---|
| From:<br>Until: | |
| From:<br>Until: | |
| From:<br>Until: | |
| From:<br>Until: | |
| From:<br>Until: | |
| From:<br>Until: | |
| From:<br>Until: | |
| From:<br>Until: | |
| From:<br>Until: | |
| From:<br>Until: | |
| From:<br>Until: | |
| From:<br>Until: | |

[†]APN: Advanced Practice Nurse

**Addendum 3** Framework for the categorization of activities of APNs' in hospitals in Flanders in different roles and domains

| ROLES | Domain 1: Patient and family<br>This domain refers to the direct and indirect contact with the patient and family. | Domain 2: Team<br>This domain refers to the position of the APN in a multidisciplinary team and the input in a specific hospital department or ward. | Domain 3: Healthcare organization<br>This domain refers to the contribution of the APN in hospital policy, specific care teams, and (inter)national networks. |
|---|---|---|---|
| Clinical expert | **DIRECT CONTACT**<br>**Nurse-led consultation**<br>• Medical history taking in preparation of a physician consultation<br>• Psychosocial history taking<br>• Discuss medical information (e.g. test results, treatment options) with patient/family.<br>• Guide patient/family to make decisions about treatment options<br>• Health promotion education and advice to patient/family<br>• Support the patient's coping mechanisms<br>• Perform physical examination<br>• Execute technical nursing skills/interventions<br>• Give one-to-one patient education<br>**Bedside consultation**<br>**Multidisciplinary consultation**<br>Nurse-led or bedside consultation in collaboration with/in the presence of other healthcare professionals<br>**Telephone communication**<br>• Make appointments for patient consultations<br>• Discuss follow-up care/treatment with patient/family<br>• Advise patient/family<br>**INDIRECT CONTACT** | • Multidisciplinary meeting to discuss a single patient with one of the following: physician, psychologist, nursing team, pharmacist, APN colleague<br>• Report to nursing team after patient bedside consultation<br>• Guide/advise other healthcare professionals within the hospital (physician, psychologist, nursing team, pharmacist, APN colleague) on patient care/treatment (e.g. APN is consulted to set up a treatment plan for wound care) | • Contacts with healthcare professionals from other hospitals concerning a patient<br>• Transmural care (e.g. contacts with home care nurses or general practitioners concerning a patient)<br>• Guide/advise other healthcare professionals outside the hospital (physician, psychologist, nursing team, pharmacist, APN colleague) on patient care/treatment (e.g. APN is consulted to set up a treatment plan for wound care) |

| | | | |
|---|---|---|---|
| | **Administration**<br>• Complete electronic patient records<br>• Registration of telephone consultations' content in electronic patient records<br>• Complete documents from/for patients<br>• Bill patients for the use of medical supplies/equipment<br>• Order additional patient examinations/tests in consultation with a physician<br>• Interpretation of addition patient examinations/tests<br>• Prepare patients' hospital admission or discharge<br>**Other indirect activities**<br>• Book patient appointments in agenda<br>• Search for patient information in electronic patient records<br>• Advance own APN expertise (e.g. by following training)<br>**Telephone communication**<br>• Book patient appointments in agenda | | |
| **Educator and coach** | • Group-based patient education<br>• Preparations for group-based patient education | • Expertise advancement of nurses and other healthcare professionals within the hospital<br>• Coach and educate (new) colleagues (nurses, specialized nurses, APNs)<br>• Inform colleagues (e.g. specialized nurses) about APN job content and responsibilities<br>• Coach colleagues in patient care (e.g. guiding nurses executing complex wound care) | • Expertise advancement of nurses and other healthcare professionals outside the hospital<br>• Guide and educate bachelor and master students in the context of their education (e.g. thesis, internship)<br>• Participate in external education programs (e.g. teach in bachelor or master programs)<br>• Develop an e-learning module |
| **Change agent and innovator** | • Explore/evaluate a new treatment recently implemented innovative treatment with patient/family | • Initiate and design quality improvement strategies (e.g. development of an application) | • Initiate and design hospital-wide quality improvement processes |

| | | | |
|---|---|---|---|
| | | • Contribute to domain-specific care innovation projects based on substantive expertise<br>• Organize meetings<br>• Evaluate (care) procedures | • Annual evaluation with healthcare coordinator<br>• Adjust and update hospital-wide care procedures and standards<br>• Coordinate the development of care procedures and standards by a team of healthcare professionals<br>• Inform healthcare professionals about new materials/supplies/equipment in specialized care<br>• Meet with representatives from other hospitals concerning the development of an online patient platform<br>• Collaborate with APN colleagues concerning the implementation of APNs in Belgium |
| **Researcher** | • Collect research (survey) data from patient/family | • Conduct/assist in multidisciplinary scientific research<br>• Disseminate own research results (e.g. making a poster for presentation at a conference)<br>• Collaborate with other healthcare professionals to develop a questionnaire<br>• Contact other healthcare professionals concerning own research design | • Read (inter)national scientific literature in preparation of hospital-wide care procedure development<br>• Summarize a large amount of scientific literature in preparation of hospital-wide care procedure development<br>• Translate scientific literature into practice<br>• Discuss own research projects with study nurses<br>• Record quality control data for feedback to healthcare professionals<br>• Discuss the initiation of research projects with the hospital's/central ethical committee<br>• Participate in research study (e.g. sign informed consent form, complete sociodemographic questionnaire) |
| **Leader** | | **Clinical leadership**<br>• Discuss with head nurses the implementation opportunities of new insights following departmental study results | **Clinical leadership**<br>• Meet with medical sale representatives about new medical materials/equipment |

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|---|---|---|---|
| | | • Short-term replacement of physician during his absence<br>**Professional leadership**<br>• Act as a role model (e.g. by visiting a temporary information stand in the hospital about patient safety and encourage nurses to do so). | • Management of hospital-wide used medical supplies/equipment (e.g. order materials/equipment)<br>• Communicate structural changes to all stakeholders in the hospital<br>• Evaluate and monitor hospital-wide quality improvement projects<br>**Professional leadership**<br>• Take the role of communication manager in diverse intern/extern project groups<br>• Prepare for a conference presentation<br>• Maintain and expand contacts with other APNs and healthcare professionals<br>• Maintain and expand contacts with (inter)national professional associations and active involvement in these organizations<br>• Prepare a meeting of a national patient interest group/association (e.g. national pain society) |
| **Collaborator** | • Assist a patient in contacting another healthcare professional<br>• Write a report on the evaluation of a patient education session by participating patients | • Multidisciplinary meetings (preparing and cleaning up the conference room, take meeting minutes)<br>• Attend patient handover/change-of-shift reporting<br>• Prepare a meeting with a colleague<br>• Meet with the infection control staff nurse<br>• Manage staff holiday and work schedules<br>• Prepare and distribute meeting minutes<br>• Look up contact details (e.g. telephone numbers)<br>• Discuss non-patient related information with colleagues (e.g. head nurse, pharmacist) | • Communication with hospital-wide services (e.g. communication services, department of information technology, department of finance/accountant)<br>• Discuss a contract for collaboration with a university college about the development of an e-learning module<br>• Meet with hospital-wide patient support teams (e.g. pain management team, palliative care team)<br>• Hospital-wide staff meeting<br>• Meet with other APNs |

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|---|---|---|---|
| | | | • Attend meeting about hospital accreditation (e.g. Joint Commission International label) |
| **Facilitator of ethical decision-making** | | • Mediation in a disagreement between colleagues about the care for a palliative patient | |
| **Other activities** | • Telephone communication (general telephone calls)<br>• Computer communication (general e-mails)<br>• Restart computer<br>• Agenda/time management: check daily schedule/patient appointments<br>• Break (coffee break, lunch break, toilet break, waiting for meetings to begin)<br>• Travel inside the hospital (e.g. to attend meetings)<br>• Get changed into hospital clothes/regular clothes<br>• (General) administration<br>• Prepare for absence<br>• Bias-time (information to non-participant observers about observed activities) | | |

[†]APN: Advanced Practice Nurse