

Roles of Advanced Practice Nurses in the care of older adults in Primary Healthcare In Europe: A Scoping Review

Master's thesis

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Abstract

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Roles of Advanced Practice Nurses in the care of older adults in Primary HealthCare in Europe: A scoping review.

Keywords:

Roles, advanced practice nurse, advanced nurse practitioners, nurse practitioners, clinical nurse specialists, older adults, primary healthcare

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Background: Advanced Practice Nurses (APNs) are a valuable asset in health care that has emerged to fulfill the shortage of general practitioners and geriatricians in primary healthcare. With extensive skills, APNs can deliver personalized and holistic care to older people. Scarcely any study has explored the role of APNs in caring for older adults within primary healthcare settings in Europe.

Aim: To explore the roles of APNs in the care of older adults in primary healthcare in Europe.

Method: A scoping review methodology utilizing Arksey and O'Malley guidelines was employed in this thesis. An extensive search was conducted in MEDLINE, Academic Search Complete, CINAHL, APA PsycINFO, APA PsycArticles, PubMed, Scient Direct, and Google Scholar. Also, a citation search was considered. The studies that were published in English; between January 2013 and December 2023; and studies conducted in Europe that focused on the roles of advanced practice nurses in the care of older adults in primary health care were included.

Result: Ten studies were identified that answered the research question. The included studies were summarized to answer the research question. The results of this study show that the roles of APNs are: 1) Direct care Provider, 2) Care coordinator and consultant, 3) Patient educator, 4) Case manager, and 5) Non-clinical roles. The APNs' roles in this study harmonize with the competencies of Advanced Practice Nurses as described in the model "The Caring Advanced Practice Nursing model". This model is used as a theoretical framework for this study.

Conclusion: The roles and responsibilities of APNs are unclear, and the legislation needs to be improved in Europe. The identified role of APNs emphasizes the importance of APNs in providing quality primary healthcare services to older adults. This scoping review has presented a few roles of APNs in primary healthcare for older adults; however, further research is necessary to identify more of these roles. Hopefully, this scoping review will help recognize APN roles and expertise in Finland, where the role is still in its early stages.

Forward

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1 Introduction

The global population is aging rapidly, resulting in a significant increase in older adults (World Health Organization, 2022). The World Health Organization (2022) estimates the aging population to reach 1.4 billion by the end of 2030 and 2.1 billion by the end of 2050. This demographic shift can pose notable challenges to healthcare services. With aging, people often face complex health problems and multiple chronic conditions necessitating specialized and holistic healthcare services (Ljungbeck et al., 2023; Prajankett & Markaki, 2021). Primary healthcare (PHC) is usually the first contact health services for older adults (Ikonen et al., 2022). In PHC, health promotion, disease prevention, palliative care, and rehabilitation are essential (Altermatt-von Arb et al., 2023). However, many countries face physician and geriatrician shortages in primary health care (Prajankett & Markaki, 2021). To fill this shortage, advanced practice nursing has emerged as an indispensable asset in many countries.

APN is the abbreviation used for both advanced practice nursing as a profession and advanced practice nurse as a professional (Finnish Nurses Association, 2016). APN is a broad term that has been used globally to describe advanced roles, among which clinical nurse specialists (CNS) and nurse practitioners (NP) are commonly used in practice (International Council of Nurses, 2020). With the wide range of competencies that advanced practice nurses (APNs) possess, they can provide comprehensive and individualized care to the elderly (International Council of Nurses, 2020). The APN role originated in the USA and has been evident for almost a century (Fougère et al., 2018). Beginning with nurse midwives and nurse anaesthetists, after a decade, APNs were introduced in psychiatry in 1954, pediatrics, and family and adult medicine in 1965. From a global perspective, the APN role was unfolded to fulfill the shortages of physicians, improve access to care, and increase the quality of care provided (Finnish Nurses Association, 2016; King et al., 2018). In primary care, implementing advanced practitioners has a positive impact (King et al., 2018).

A preliminary search was conducted in an academic database titled Medical Literature Analysis and Retrieval System Online (MEDLINE) using words and phrases like “elderly or frail or aged or older or geriatric” AND “APN or advanced practice nurse or advanced practice nursing or advanced practitioners” AND “role” AND “primary healthcare or health services.” This resulted in 165 items. No scoping review was found about older adult care regarding the roles of advanced

practice nurses in primary healthcare in Europe. Nevertheless, some empirical studies were conducted about the role of APNs with different groups of population in different settings (Altermatt-von Arb et al., 2023; Grant et al., 2017; Neto et al., 2023).

There are limited studies on APNs' role in primary health care for the older population. For this reason, it is necessary to study this topic. Therefore, this scoping review aims to dispense a comprehensive description of the roles of APNs in older adult care in primary healthcare settings in Europe. This investigation will provide helpful insight into the role and expertise of APNs in older adult care. The roles and activities performed by APNs in older adult care collected from different studies in this scoping review can be a reference for policymakers and organizations in considering the APN's role in older adult care in Finland.

In the upcoming chapter of this thesis, we aim to provide insights into the history and development of advanced practice nursing and the different roles and activities they have been performing under various titles. Along with this, a theoretical framework model that correlates with the results of this scoping review has been explained.

2 Background

The background section will shed light on the development of advanced practice nursing and review the literature on the related topic.

2.1 Development of Advanced Practice Nursing

Advanced practice nursing (APN) has been evident for almost 100 years (Jokiniemi, 2014). However, APN have evolved differently in different countries and have varying speeds and approaches. In some countries, the role was first developed, followed by regulation and scope of practice; meanwhile, other countries started with regulation and scope of practice, followed by education. APN was first introduced and formally recognized in the USA in the 1900s laying the foundation for the global advancement of APN (International Council of Nurses, 2020).

Clinical nurse specialist (CNS) was introduced in the early 1940s in the USA to provide specialized care as a psychiatric specialist nurse, nurse anesthetist, and nurse midwife (International Council of Nurses, 2020). In contrast, nurse practitioners (NPs) were introduced in the 1960s in the USA to improve children's access to primary health care services. In Canada, these advanced roles started in the 1970s. In Canada, CNS provides clinical consultation, case management of complex health problems, and nursing staff management. On the other hand, NPs were introduced to improve access to primary care for underserved populations. In the 1980s and 1990s, this role was developed in the UK and countries like Australia and New Zealand, respectively. According to Maier (2019), in countries like the USA, Canada, Australia, New Zealand, and the UK with a long history of APN, these advanced nurses can work independently and have the right to prescribe medications within their specialty; however, few differences can be seen according to the laws enforced.

Over time, the concept of advanced practice nursing (APN) spread to European countries at different paces (Finnish Nurses Association, 2016; Lee et al., 2020). In Europe, the advanced nursing role was only introduced in the 2000s. The APN title is not regulated and protected in most European countries, with a few exceptions, such as Ireland, the Netherlands, and Norway. There is a difference in educational preparation and scope of practice (Egerod et al., 2021). One of the biggest obstacles to the effective and efficient development of advanced practice nursing in

Europe is the lack of consistency in legislation, education, titles, responsibilities, scope of practice, skills, and competencies (Lee et al., 2020). In the Netherlands, the APN role of nurse practitioner (NP) was introduced in 1997, but the role was regulated only after 2009 (Lee et al., 2020; Schober, 2016). These roles were introduced to fulfill the shortages of physicians. According to Schober (2016), in Ireland, the advanced practice role was introduced in 1996 as an emergency nurse practitioner in a hospital setting. Presently, Ireland has two advanced roles: Advanced Midwife Practitioner and Advanced Nurse Practitioner.

In the Nordic context, Finland, Denmark, and Iceland have developed more CNS roles than Norway and Sweden, where the NP role is more evident (Jokiniemi et al., 2021). Finland, Denmark, and Iceland have similar CNS roles, but their scope of practice differs. In Denmark and Iceland, CNSs are prepared with advanced clinical skills in a specialty in nursing to work more in the clinical field. On the contrary, Finland has developed a CNS role that aligns with the international CNS role, which is less clinical (Jokiniemi et al., 2021). According to Ljungbeck et al. (2023), in Sweden, NPs primarily work in geriatric care in municipal healthcare. Similarly, in Norway, NPs are introduced in primary and specialist care (Holm Hansen et al., 2020). In Nordic, Sweden was the first country to start educational preparation for APNs, and the first APN in Sweden graduated in 2005 (Fagerström, 2012).

Advanced practice nursing (APN) role is not protected in Finland (Jokiniemi et al., 2020). In Finland, APN was introduced at the beginning of the 2000s, although the concept of advanced nursing was already seen in the 1900s in the nursing literature in Finland (Jokiniemi, 2014). According to the Finnish Nurses Association (2023), APN titles and job descriptions are regulated and defined differently within the organization. The CNS title is well recognized in Finland. On the other hand, the NP title is used variably for advanced nurses working in different positions (Finnish Nurses Association, 2023).

There is no uniform education or curriculum for APNs in Finland. A nurse can work as an APN after a master's degree in nursing (Finnish Nurses Association, 2023). The education that prepares master's education for nurses was already introduced in 1979 (Jokiniemi, 2014; Nieminen et al., 2011). However, APN education in line with The International Council of Nurses' guidelines was only started in 2006. The first CNS role was introduced in University Hospitals in specialty health care in 2001 (Finnish Nurses Association, 2023; Jokiniemi, 2014). Most CNSs have master's degrees from the university. In Finland, the number of CNSs was estimated to be 120 in 2022

(Finnish Nurses Association, 2023). In contrast, the number of ANPs in Finland is challenging to evaluate as the APN role is not regulated as well, and the title and job description vary within organizations. In Finland, limited nurse prescribing is a protected title and has been regulated since 2010 (Finnish Nurses Association, 2016; Maier, 2019). Nurse prescribing is a right granted to nurses to prescribe certain medications after pursuing a 45-credit education. However, it is not a master's degree. The number of nurses with limited prescribing rights was 691 in 2023 in Finland (Finnish Nurses Association, 2023).

2.2 Previous studies on the role of APNs in primary healthcare

As the APN role is not regulated in Finland, there is a lack of guidelines on the roles of APNs. It is determined by the organization what title they want to use and what roles to assign (Jokiniemi et al., 2020). To our knowledge, no scoping review has investigated the role of APNs in the primary healthcare setting in the care of older people in Europe.

In the context of Swiss primary health care, APNs perform clinical care activities such as taking history and conducting a physical examination (Altermatt-von Arb et al., 2023). ANPs referred patients to laboratory tests, initiated appropriate treatment, and prescribed and modified medications within their defined limits. Additionally, APNs performed independent treatment for constipation and ear irrigation. Besides this, APNs also conducted health assessments of disabled and long-term residents and provided minor treatments in their homes. Similarly, APNs provide individualized care to patients, guide the patients and their relatives on self-management, collaborate with general practitioners in care management, coordination, care planning, and follow-up, and develop the APN role and care model. The study highly recommends APNs in primary care settings; however, the study suggests working towards a comprehensible description of the roles of APNs. (Altermatt-von Arb et al., 2023)

In the UK, APNs work independently and autonomously (Hill et al., 2021). In primary health care, APNs have four leading roles and responsibilities: clinical care, research, leadership, and education. The clinical responsibilities of APNs are to conduct comprehensive assessments, diagnoses, and implement personalized care plans for patients with undefined medical conditions; perform thorough clinical evaluations to understand patients' physiological and psychological needs, shaping treatment plans accordingly; develop, implement, and assess tailored interventions for patients with complex and long term health conditions; manage both acute and chronic

conditions by integrating pharmacological and non-pharmacological methods into holistic management strategies; prescribe and monitor medications, in line with evidence-based practices and professional guidelines and also provide guidance and support for adherence to the regimen; manage emergencies and empower patients to embrace health-promoting behaviors and self-care practices, fostering healthier lifestyles through education and guidance. Similarly, APNs collaborate with other professional teams to provide holistic care. (Hill et al., 2021)

In British Columbia, Canada, nurse practitioners (NPs) were introduced first in acute and long-term care and primary healthcare (Sangster-Gormley et al., 2013). In primary healthcare, APNs have roles like providing clinical care, consultation, coordination, education and guidance, and leadership. The NP independently managed patients with conditions like sore throats and chronic conditions. They provided holistic care to the patients and their families in collaboration with other healthcare teams and community agencies. In managing complex conditions, the NP consults the physician or refers them if needed. Moreover, NPs are pivotal in educating patients and their families on chronic disease management, health promotion, and self-care practices. (Sangster-Gormley et al., 2013)

The range of responsibilities for nurse practitioners (NPs) spans from specialized disease management to comprehensive care addressing patients' overall health and wellness, as evidenced in a study by Grant et al. (2017). The NPs are focused on managing or preventing chronic conditions following evidence-based protocols. NPs not only addressed patients' physical health but also their social and emotional well-being. This entails coordinating care across multidisciplinary teams, like case management for home-based palliative care patients, addressing the needs and well-being of vulnerable populations (Grant et al., 2017).

Advanced practice nurses (APNs) have contributed in various ways to primary health care, from patient care to management (Neto et al., 2023). APNs are responsible for vaccinations, managing chronic and non-chronic conditions, wound care, preventing sexually transmitted diseases, and providing family planning services. Additionally, they assess the family's needs throughout life situations and provide prenatal and post-natal services. APNs also prescribed medication as needed. Similarly, APNs are involved in providing guidance and health education. They educate chronically ill patients on lifestyle changes, self-care, and weight loss. In addition, APNs provided training and education to nursing staff and conducted health research. APNs managed wards and home visits and mobilized resources and finances. (Neto et al., 2023)

3 Theoretical Framework

This section will discuss the theoretical perspective that meets the thesis aim and research question and the fundamental concepts used in this thesis work. A caring Advanced Practice model developed by Fagerström (2021) will be used as a theoretical framework (see Figure 1). The key concepts used in this thesis are advanced practice nurse, the roles of APNs, and older adult care in primary healthcare settings.

3.1 The Caring Advanced Practice Model

This model is a conceptual model that describes advanced practice nursing characteristics and central concepts (Fagerström, 2021). It has been derived from the ICN principles of Advanced Practice Nursing and the Hamric model of Advanced Practice Nursing. This model also involves the caritative perspective from the Erikson Nordic theory of caritative caring and the Person-centered perspective developed by Fagerström. The nurse-patient relationship is the core of the Caring advanced practice nursing model. The nurse's view of knowledge and the theoretical perspective influence the nurse-patient relationship and nurses' thoughts, decisions, and actions and, eventually, the outcome of the nursing care provided. The model comprises critical contextual factors, a central theoretical perspective, and advanced practice nursing competencies (see Figure 1).

3.1.1 Contextual factor

The critical contextual factors are the factors that influence the development of advanced practice nursing, such as organizational structure and culture, legislation, certification and registration, leadership, continuous evaluation, and marketing (Fagerström, 2021).

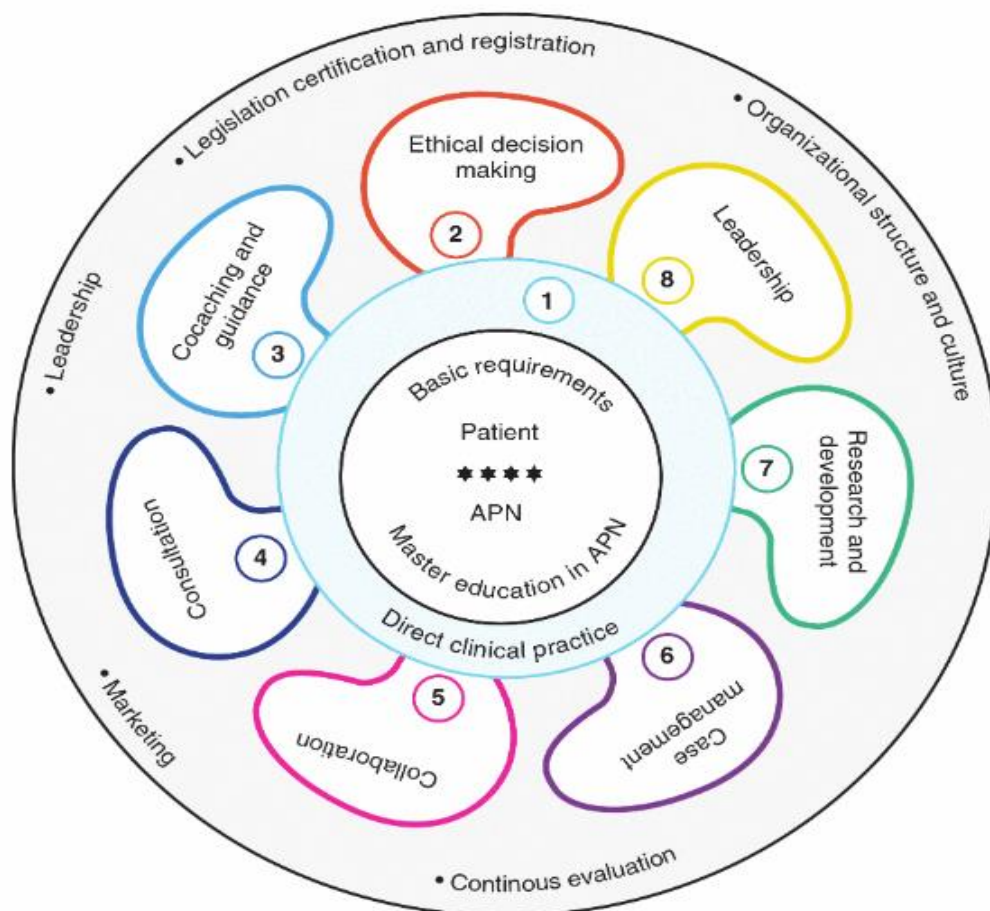


Figure 1 The caring advanced practice nursing model (used with permission from Fagerström Lisbeth)

3.1.2 Central Theoretical Perspective

The theoretical perspective in this model determines the quality and outcome of nursing. These perspectives are holistic views of human beings, a person-centered fundamental ethical approach(ethos), caring, and health (Fagerström, 2021).

3.1.3 Advanced Practice Nursing Competencies

The model consists of eight competency domains of advanced practice nursing (APN) that are crucial for advanced practice nurses (APNs) to work in the primary healthcare or hospital setting (Fagerström, 2021). These competencies are direct clinical practice, ethical decision-making, guidance and coaching, consultation, collaboration, case management, research and development, and leadership. The core competencies are described below in length.

Direct Clinical Care

Direct care is the central competency of advanced practice nursing. Direct care includes all the activities and interventions the nurses carry out in direct patient contact. These involve health history taking, detailed physical assessment, requesting and performing diagnostic tests, interpreting clinical and laboratory tests, prescribing medications and other therapies, managing complex, critically ill patients, and health promotion and disease prevention. The core components of nursing are clinical assessment, nursing care, and treatment of health problems and chronic conditions. However, clinical assessment and treatment in advanced nursing have to be seen from a different perspective in the new role. Medical professionals generally perform these roles. (Fagerström, 2021)

Ethical decision-making

An important aspect of advanced practice nursing is ethical decision-making. The APN can recognize the ethical problem. Similarly, they can solve more complicated ethical issues. The challenge of complex ethical decision-making always accompanies the complex health problem. APNs can solve these complex ethical situations through their profound knowledge of ethical theories. APNs advocate for the patient and their families and educators for general nurses and team members. All nurses are responsible for ethical conduct towards their patients. In advanced practice nursing role, nurses take a leading role in solving ethical issues that are encountered. APNs are expected to create an ethically sustainable community and advocate for social justice. (Fagerström, 2021)

Coaching and guidance

Coaching and guidance include patient education, mentoring, anticipatory guidance, and counselling. Coaching and guidance increase the individual's health knowledge. Coaching refers to providing support to solve problems and help to make life changes. The caring relationship between APNs and clients is significant in coaching and guidance. A caring and client-centered relationship is essential for gaining a fruitful output. During guidance, the nurse gives suggestions and information to clients and their families on what to expect during a particular health process. APNs also educate clients about their illnesses and suggest and counsel them to make decisions. This reduces the client's anxiety and promotes self-efficacy. It is necessary to evaluate the client's

knowledge of the matter and only provide the necessary information to make the guidance effective. APN helps clients achieve goals and modify their habits and lifestyles. (Fagerström, 2021)

Consultation

Advanced practice nurse as a consultant is considered an essential competency of APN. Consultation is an interaction process between two professionals where one seeks advice from the expert to solve a problem. It is the sharing of experience and knowledge. Consultations between APNs and physicians; and between APNs and nurses are the usual consultations. Irrespective of their experience, APNs consult physicians and other healthcare members to ensure the assessment is carried out appropriately. Consultation helps to combine the expertise between both parties, resulting in the client and their families getting holistic, personalized, and comprehensive care. (Fagerström, 2021)

Collaboration

Collaboration involves two or more professionals coming together for mutual benefit. The professionals share their ideas, opinions, and commitments to achieve a common goal. In advanced practice nursing, collaboration is integral to effective communication, mutual trust and respect, common aim, clinical competence, and accountability. APNs collaborate with different individuals, groups, and organizations and work as a team to ensure the welfare of patients. (Fagerström, 2021)

Case management

Management of patient care pathways and continuous follow-up in collaboration with multidisciplinary teams can be described as case management. This is often for patients with long-term complex health needs or chronic conditions who need to provide quality care cost-effectively. APNs have an active role as case managers. They connect the patients with various healthcare centers and act as an advocate for the patients. Making a care pathway involving the patient and their family and focusing on improving and providing quality care for the patient is an integral part of case management. It aims to promote health and disease prevention. (Fagerström, 2021)

Research and Development

An essential aspect of APNs is research and development. Change is a constant in health science today, and APNs are involved in it. It is their responsibility to promote evidence-based practice. These can help provide quality care to patients. Evidence-based practice, patient safety, research results, and implementation are being constantly developed and improvised. Promoting evidence-based practice in direct nursing practice and consultation, illustrating their usefulness, and recommending reliable sources of information help implement them in different case scenarios. APNs participate in different research and development projects to find new knowledge that can be used as guidelines for evidence-based practice or to investigate and evaluate the quality of advanced nursing practices. (Fagerström, 2021)

Leadership

APNs have leadership roles in their organization, including clinical, professional, health policy, and system-level leadership. They are focused on evidence-based research ideas for effective ways of practice. APNs are involved in teaching, mentoring, consulting, implementing, and ensuring evidence-based practice in the organization. These are the characteristics of a leader. Clinical leadership focuses on the patients and their needs, providing good quality care. Professional leadership focuses on recognizing and providing the necessary support to colleagues. System-level leadership focuses on leading and influencing an organizational structure, an essential treatment process for the patients in nursing care. APNs have the knowledge and ability to organize and manage patient care and resource distribution. APNs can engage themselves at the political level and help alter rules and regulations. (Fagerström, 2021)

3.2 Key Concepts

3.2.1 Advanced Practice Nurse

Advanced practice Nurses (APNs) are nurses with advanced knowledge who can work independently and have a clear, autonomous, and professional role (International Council of Nurses, 2020). APN competencies and scope of practice involve direct or indirect health services at an advanced level, extensive knowledge to manage complex health conditions among vulnerable groups of people, providing knowledge and education regarding different evidence-based research,

acting as a consultant and case manager to collaborate with the multidisciplinary team for the welfare of the patients (International Council of Nurses, 2020).

APN roles have different titles according to the rules and regulations of their respective countries. For example in the USA, APNs are named advanced practice registered nurses (APRN). APRN practice in one of these four roles: nurse practitioner, clinical nurse specialist, certified nurse anesthetist, and certified nurse midwife (International Council of Nurses, 2020; National Council of State Boards of Nursing, 2008). In Finland, CNS and NP are two roles commonly used to describe Advanced Practice Nursing (Finnish Nurses Association, 2016).

Clinical nurse specialists are nurses with postgraduate education and a specialization in specific fields or areas, such as wound care, diabetes care, etc., through extensive experience or specialized clinical courses (Fagerström, 2021; International Council of Nurses, 2020). In addition, CNS provides education and support for interdisciplinary staff and facilitates change and innovation in healthcare systems.

Nurse practitioners have a master's level of education, which helps them to gain advanced competence in the clinical assessment of patients' health problems and make complex decisions for their patients' well-being (Fagerström, 2021). According to the International Council of Nurses (2020), NPs work mainly in hospital and community settings. Their scope of practice includes direct clinical assessment, coaching and guidance, case management, leadership and research, and prescribing medication. In this scoping review, Advanced Practice Nurses refer to nurse practitioners and clinical nurse specialists who meet the International Council of Nursing definition.

3.2.2 Roles of APN

Defining the roles and responsibilities often involves practices performed in the working environment (Scanlon et al., 2019). In the same manner, the roles of APNs are defined by their practice and the nature of their work. According to Schober (2016), APN roles encompass different activities within education, practice, and regulation. Specific characteristics like knowledge, expertise, and clinical judgment make the APN role different from general nursing (Schober, 2016).

According to the American Association of Nurse Practitioners (2022), assessing and diagnosing chronic and acute illnesses, ordering laboratory tests, prescribing medication, promoting health and disease prevention, and educating and counseling patients are the scope of practice for nurse practitioners in primary healthcare. In addition to this, they work independently and coordinate with other health professionals, providing a more comprehensive range of healthcare services to families, groups, and communities.

When taking care of patients, understanding a patient's needs and providing the services accordingly are vital aspects. Evidence-based practices are used to provide the best care. APNs know how to examine the evidence critically from different resources and implement the most effective ones to benefit patients and have a positive impact. Thus, APNs can connect these tasks with their leadership role and decision-making strategies. APNs with advanced clinical skills and knowledge can work with healthcare agencies or governmental planning groups. They can guide and support other nurses to help in different practice scenarios. (Walker & Polancich, 2015)

In the USA, the Advanced practice registered nurse (APRN) consensus model describes the role of a Nurse Practitioner. It is a model that applies to all APRNs, including nurse practitioners, certified registered nurse anesthetists, certified nurse midwives, and clinical nurse specialists. The APRN consensus model can provide guidance and uniformity in regulating the APRN roles, licensure, accreditation, certification, and education. This allows the APRNs to practice their education and license between the states to the full extent. However, not all the states in the USA follow this model. Some states follow the entire practice, some are reduced, and a few are restricted. (National Council of State Boards of Nursing, 2008)

3.2.3 Older People Care in Primary Health Care Setting.

The global trend of an increasing aging population is no different in Europe. In Europe, the population of older people 65 years and above was 90.5 million at the beginning of 2019 (European Commission. Statistical Office of the European Union., 2020). It is expected to increase to 129.8 million by 2050.

According to the World Health Organization (2021), primary healthcare can be defined as "a whole-of-society approach to health that aims at guaranteeing the best possible level of health and well-being and their fair distribution by focusing on peoples' needs and as early as possible along

the continuum from health promotion and disease prevention to treatment, rehabilitation, and palliative care, and as close as feasible to peoples 'daily environments."

Primary health care (PHC) is where individuals initially address their health issues. In the healthcare system, PHC is a first choice, providing essential information regarding disease prevention, diagnostics, curative services, and long-term care to older adults. As the aging group is steadily increasing, older adults having chronic health conditions are considered one of the vulnerable groups of the population who use primary healthcare services. (Ikonen et al., 2022)

In the Finnish healthcare system, every person living in Finland has a right to adequate healthcare treatment (Primary Healthcare Act, 1972). The primary healthcare services in Finland are organized by Wellbeing Services counties (Ministry of Social Affairs and Health, n.d.). These Wellbeing Services counties provide the primary care services by themselves or in collaboration with other Wellbeing Services counties or purchase from private healthcare providers. Primary healthcare includes health counseling, mental health care, dental health care, maternity and child welfare services, appointments with doctors and other health professionals, monitoring the health of people, vaccination, and emergencies (Ministry of Social Affairs and Health, n.d.)

A lack of primary care health professionals has recently been seen more often. The primary care model has been based on physician-centered care so far. Advanced practice nurses (APNs) have the knowledge and competence to perform clinical assessment, diagnose, treat, and manage chronic illnesses, which physicians previously did. Thus, the introduction of task shifting has reduced the burden of physicians and coping with the physician shortage in primary health care. Also, introducing new roles such as case manager, health consultation, and other roles has contributed to dealing with various issues regarding the shortage of physicians. So, the role of the APN is essential in the primary healthcare setting. (Fagerström, 2021)

In a primary healthcare setting, an APN is responsible for promoting the patient's health by providing guidance and coaching that is deemed to be necessary for the prevention of health problems or motivation for a healthy lifestyle (Fagerström, 2021). APNs are crucial in primary healthcare in developing and implementing different health promotional activities and strategies for the people inhibited in the community (Johansson et al., 2024).

4 Aim and Research Question

This scoping review explores advanced practice nurses' role in caring for older people in primary healthcare in Europe.

This study aims to answer the following research question.

1. What are the roles of advanced practice nurses in caring for older people in primary healthcare?

5 Methodology

The methodological approach used in this study is a scoping review. While using the available evidence to summarize the existing literature, a scoping review is not specified in scientific journals. It covers the areas of relevant grey literature as well. The scoping review focuses on summarizing the data and the key concepts from various literature. It does not evaluate the quality of the literature. A scoping review is used to examine the extent, range, and nature of research activity, to identify the research gaps in the existing literature, to determine the value of undertaking a full systematic review, or to summarize and disseminate the research findings. (Arksey & O'Malley, 2005; Tricco et al., 2016)

The methodology guide published by Arksey and O'Malley (2005) will be used for the scoping review. The Joanna Briggs Institute (JBI) has developed a manual guideline for a scoping review (Peters et al., 2021; Tricco et al., 2016). According to the guidelines, the scoping review should be carefully conducted, transparent, and reliable. In 2018, the JBI guidance for scoping reviews was updated, and the Preferred Reporting Items for Systematic Reviews extension for Scoping Reviews (PRISMA-ScR) was developed. The PRISMA-ScR will be used in this study to report the search process (Peters et al., 2021; Tricco et al., 2016). The methodology from Arksey and O'Malley (2005) consists of six stages.

Stage 1: Identifying the research question

The initial stage in a scoping review is formulating the review question, which relies on the context of Population, Context, and Concept (PCC). This is to clarify the study purpose, specify and refine the question, and link it with the aim and the purpose of the study. The review question will also help define the inclusion and exclusion criteria (Arksey & O'Malley, 2005).

This study used the PCC model to formulate the guiding research question. "Population or participants" are people 65 years and above. The "Context" is caring for older people in a primary healthcare setting, which also includes home care and community care in Europe. The "Concept" is the roles of advanced practice nurses (nurse practitioners and clinical nurse specialists). Using the PCC model, the formulated review question is: "What are the roles of advanced practice nurses

or advanced practitioners in the care of older people in primary healthcare in Europe?”. The table shows the formulation of the aim and research question in the PCC concept (Table 1).

Table 1 Aim and Research question according to the PCC model

Topic	Aim	Research question	Population	Concept	Context
Roles of Advanced Practice Nurses in Geriatric Care: A Scoping Review	To explore the advanced practice nurses' role in the care of older people within primary healthcare in Europe	What are the roles of advanced practice nurses or advanced practitioners in the care of older people in primary healthcare?	Older people or the aged population 65 years and above seeking primary health care	Roles of advanced practice nurses	Primary healthcare including community care and home care

Stage 2: Identifying relevant studies

After formulating the research question, the next step was to identify relevant studies. In this process, literature was searched through MEDLINE, CINAHL, Academic Search Complete, APA PsycINFO, APA PsycArticles, PubMed, and Science Direct. A combined search was done in the MEDLINE, CINAHL, Academic Search Complete, APA PsycINFO, and APA PsycArticles. The search terms used for the search in the databases were “Roles” AND “Advanced Practice Nurses or Advanced Practice Nursing or Nurse Practitioners or Clinical Nurse Specialists” AND “elderly or aged or older or elder or geriatrics or senior” AND “primary care or primary healthcare or primary healthcare settings.” Altogether, 1,590 articles were identified from the databases mentioned above.

After this, inclusion criteria were applied to limit the research results to ensure the most recent knowledge was used in the study. After applying the inclusion criteria (shown in Table 2), the search resulted in 281 studies. Duplicates were removed automatically, which resulted in 177 results. Another search was done in PubMed using the same search terms, resulting in 1121 results and 228 after applying the inclusion criteria (shown in Table 2).

Table 2 *Inclusion and Exclusion Criteria*

Inclusion criteria	Exclusion criteria
Articles published between 2013-2023	Articles published before 2013
Written in the English language	Studies in other languages except English
Available in full-text	Not peer-reviewed and no full-text
Peer-reviewed	
Age 65+ years	

Similarly, a search in ScienceDirect was done using the phrase “Roles of advanced practice nurses in geriatric care in the primary healthcare setting.” This resulted in 592 articles after the application of the inclusion criteria. The inclusion criteria applied in this search were published between 2013-2023, written in English, and Nursing and Health professionals. Altogether, 937 studies from the database underwent first-level screening(shown in Figure 2).

Also, literature was searched through Google Scholar. An advanced search was carried out with criteria; published between 2013 and 2023 and reviewed articles. The search words used in the advanced search were “roles” and “advanced practice nurse,” “elderly care,” and “primary healthcare.” A total of two studies that were not found in other databases were selected after reading through the title of the studies. Similarly, citation searching from the studies included in the review was done, which resulted in 5 studies. A total of seven studies were identified from other sources. After reading through the abstract, six studies were taken for second-level screening. The keywords used for searching the studies in the databases are shown in Table 3.

Table 3 *Database and search keywords*

Databases	Keywords
MEDLINE, Academic Search Complete, CINAHL, APA PsycINFO, and APA PsycArticles, PubMed	roles advanced practice nurses advanced practice nursing nurse practitioners clinical nurse specialists elderly aged older people elder or geriatrics or senior primary care primary healthcare

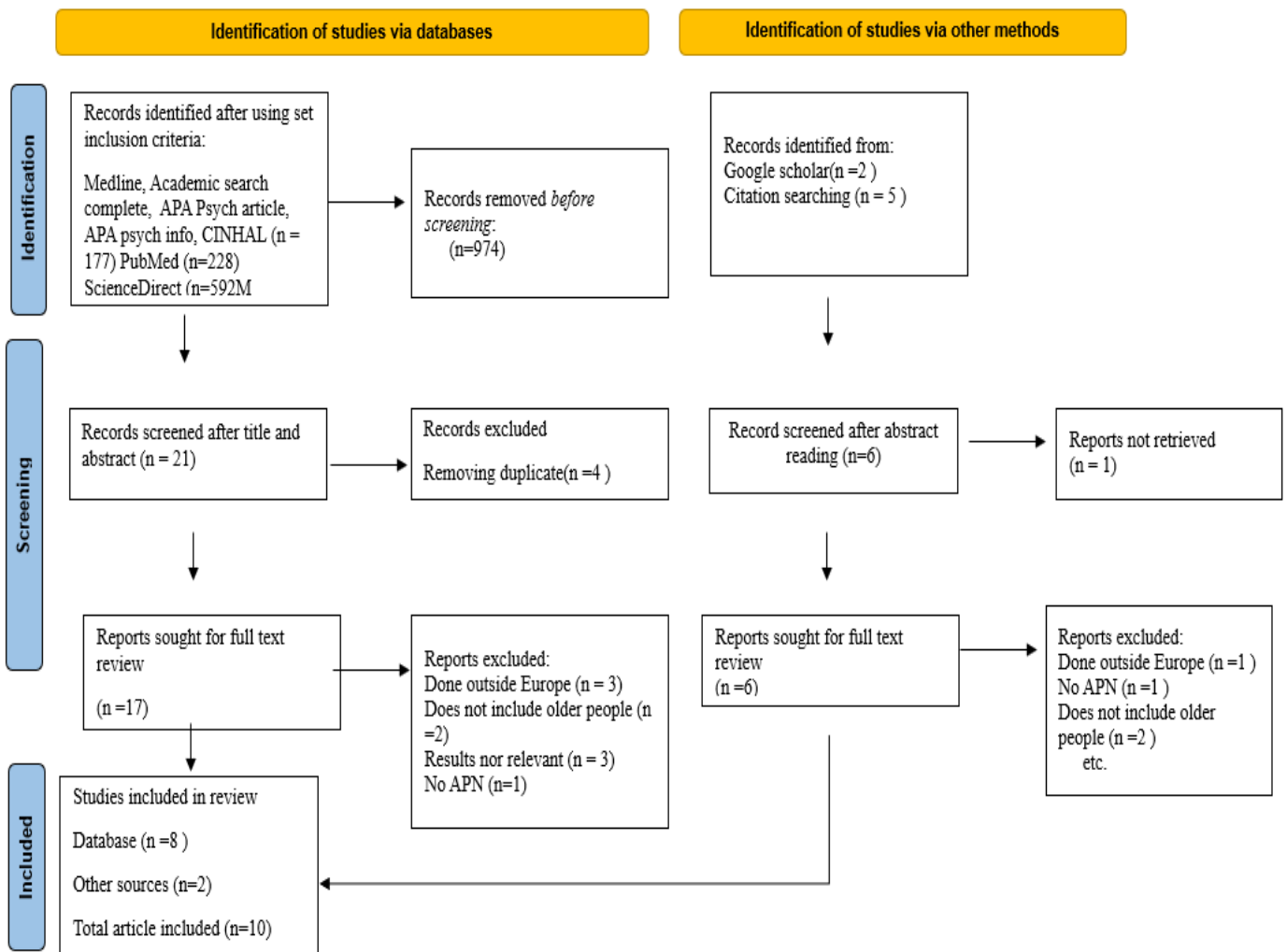
	primary healthcare settings
Science Direct	roles of advanced practice nurses in geriatric care in the primary healthcare setting.
Google Scholar	roles advanced practice nurse elderly care primary healthcare

Stage 3: Study selection

The next step is the selection of relevant and related studies for the research. Several factors might influence the selection of studies, so the inclusion and exclusion criteria must be specified (Arksey & O'Malley, 2005).

In this process, studies related to the topics that meet the inclusion criteria set by the authors will be selected, and other studies will be excluded. The first level of screening was done by reading through the titles and the abstract of the 937 studies from the databases and 7 studies from other sources. Twenty-one studies were selected from the databases and six from other sources for the second level of screening. From the 21 studies of the databases, four studies were removed as duplicates which resulted in 17 articles. A total of 23 studies from the databases (17 studies) and other sources (6 studies) underwent the second level of screening.

Both authors read the 23 studies thoroughly to determine their eligibility. The results of the study were read many times by both authors to find out if they answered the research question. Studies that answered the research questions, done in primary healthcare as a research setting, and done inside Europe were included in the final review (refer to Appendix 1). Other studies that do not answer the research question, done outside Europe, do not include care of older adults, and APNs without master's degree education were excluded (refer to Appendix 2). Out of the 23 read studies 10 were selected for final review (Appendix 1) and 13 were excluded (Appendix 2). The included studies are marked by an asterisk (*) in the reference list. The Prisma flowchart of the study selection process is shown in Figure 2.



Note. Source: (Page et al., 2021).

Figure 2 Prisma flow diagram of study selection

Stage 4: Charting the data

After selecting studies that fall under the criteria, data extraction is another step of the scoping review. Data extraction is the interpretation or synthesis of the data that aligns with the purpose of the research question. It is generally done systematically using charts, tables, or graphs. This can also help analyze the collected data for the research and interpret and organize them using codes and themes (Arksey & O'Malley, 2005). In this step, the included studies were read by both authors again. Then, the data extraction table was created, which illustrates the studies alphabetically, including authors, country of study, study title, aims, and results relevant to the research questions

(see Appendix 1). Also, the excluded studies are shown in a different table (see Appendix 2), including the reason for the exclusion.

Stage 5: Summarizing and reporting the results.

The fifth step is a process in which the data are organized, summarized, and presented in an analytical framework that identifies the priority of the research questions (Arksey & O'Malley, 2005). In this scoping review, the studies' findings were summarized. The data extraction table in Stage 4 helped to identify the results relevant to the aim of this scoping review. The authors familiarized with the findings of the included studies. The findings were a set of activities, roles, or responsibilities the APNs were carrying out in their work setting. The authors identified the roles based on these activities of the APNs.

Stage 6: Consultation

This is the sixth step, which is usually considered to be the optional one. However, it is mainly considered in the scoping review. The consultation comprises three authorities: Representatives from national statutory and voluntary bodies, managers and practitioners from local organizations, and critical informant care. The consultation provides additional references and insights regarding the research topic (Arksey & O'Malley, 2005). In this scoping review, we will not be using this step.

6 Ethical Consideration

According to The Finnish Advisory Board on Research Integrity, the researcher and research team have an ethical responsibility to comply with these guidelines (Finnish National Board on Research Integrity TENK, n.d.). According to TENK, research must follow the guidelines of responsible research conduct to be ethically accepted and increase the research's credibility.

As this thesis is a scoping review study, no human subject was involved; therefore, no permission was needed from the ethical board. However, the writers have followed the principles of integrity, meticulousness, and accuracy in every research phase, from choosing the methodologies to presenting the results. The work of other writers and researchers was acknowledged by adequately citing the materials. The author has tried to use peer-reviewed materials for planning, conducting the research, data collection, and recording and reporting as much as possible. However, not all of them are peer-reviewed but these were included as the content of the materials was relevant for the study. Permission was obtained from the author to use the contents and figures of the proposed theoretical model.

7 Results

This scoping review explores the role of advanced practice nurses in caring for older people within primary healthcare in Europe. Ten studies were identified as relevant to the aim that meets the inclusion criteria. The studies were conducted in Sweden (n=1), Switzerland(n=3), Spain(n=2), Norway (n=1), Netherlands(n=2), Scandinavia (n=1). These studies were mostly conducted with Nurse practitioners and advanced nurse practitioners. Different research designs, such as qualitative, scoping review, systematic review, and ethnographic were used in the selected studies. Different roles of APNs were identified from the studies included in this study. In this scoping review, the role of APNs was identified based on the activities performed. These roles are direct care provider, care coordinator and consultant, patient educator, and case manager. Also, some non-clinical roles were identified. The identified roles of APNs with the related activities are described below.

7.1 Direct Care Provider

Advanced practice nurses (APNs) provide direct care to older people. According to the study's findings (De Leede-Brunsveld et al., 2023), in Northwest European countries like the UK, Norway, and the Netherlands, advanced practice nurses (APNs) use the title nurse practitioners (NP). NPs work in community care, primary healthcare, and municipalities, providing care to different groups, including the older population. NPs work independently to diagnose, treat, refer, and manage chronically ill patients. Additionally, NPs cared for chronically ill patients suffering from chronic heart problems, chronic obstructive pulmonary disorder (COPD), etc, in their homes and performed physical examinations and specific laboratory tests, including intravenous treatment. The difference between these countries was that in the UK, NPs had prescribing rights within the role. They prescribe and review medication and manage their side effects. This has enabled NPs to provide better access to care through promptly initiating treatment.

In the context of the Netherlands, NPs as care providers perform activities like consultation, home visits, screening of frailty, taking history and physical examinations, diagnosis, and referrals as needed (Lovink et al., 2018). The NPs also prescribed medication under the supervision of general practitioners. For the older population, they provide proactive healthcare where medical and nursing care are incorporated. A scoping review study found that NPs are a substitute for

physicians, performing physical assessments, diagnosing and treating acute conditions, and managing chronic conditions (Chavez et al., 2018). They also work on disease-specific conditions, providing individualized care. A survey done in Spain in different healthcare settings, including primary care, found that APNs provided care and made clinical diagnoses in their specialization but did not explain their activities (Sevilla Guerra et al., 2022).

According to a study (Schönenberger et al., 2020) in Switzerland, the APN role has recently been introduced in primary healthcare. From an older people's perspective, APNs perform tasks like taking histories, performing physical examinations, and interpreting laboratory findings. APNs are also allowed to prescribe medication under the supervision of physicians. In another study conducted by Josi & Bianchi (2019) in Switzerland primary care, APNs performed other clinical activities, such as caring for older patients with complex health needs, including home visits for older people in collaboration with GPs. Similarly, acute conditions like fractures, influenza, and gastrointestinal problems were also treated by ANPs. Additionally, APNs prescribe medicine within a limit. At homecare, APNs perform geriatric assessments, identify care needs and provide holistic care, refer to specialists as needed, and follow up the care (Morilla-Herrera et al., 2016).

In some studies, NPs were seen as holistic care providers (Henni et al., 2018; Ljungbeck & Sjögren Forss, 2017; Schönenberger et al., 2020). A study conducted in Scandinavia (Sweden, Norway, Denmark, and the Faroe Islands) explored the roles envisioned for APNs. According to the findings of this study, APNs could work independently to provide complete care, combining nursing and medical care. In Sweden, APNs perform health examinations, perform nursing and medical care, and refer for laboratory tests (Ljungbeck & Sjögren Forss, 2017). APNs could perform comprehensive assessments of older adults, ordering laboratory tests and imaging and initiating treatments that physicians traditionally did (Boman et al., 2019). This shows the task shifting from the physician to the APN.

7.2 Collaborator and consultant

The nurse practitioners (NP) collaborate with multidisciplinary teams, including geriatricians and health and social care professionals, to seek medical advice and consultation. This helps to provide comprehensive, individualized, and holistic care (De Leede-Brunsveld et al., 2023). In Swedish municipal care, advanced practice nurses' role as collaborators is to provide nursing and medical

care. Advanced practice nurses (APNs) help patients receive different care services acting as a bridge between health services (Ljungbeck & Sjögren Forss, 2017).

According to a survey done in Spain, APNs were primarily involved in multidisciplinary teamwork outside and inside the organization, improving the quality of care and health outcomes (Sevilla Guerra et al., 2022). A qualitative study explored care coordination as a competency of APNs working in primary healthcare (Schönenberger et al., 2020). NPs were consulted by health professionals to seek advice on patient care (Henni et al., 2018).

NPs consult patients with chronic conditions, collaborate with other health professionals, carry out comprehensive geriatric assessments, and develop individualized, evidence-based care plans (Chavez et al., 2018). Similar findings were found in another study (Morilla-Herrera et al., 2016).

7.3 Patient Educator

Advanced practice nurses (APNs) are seen as pursuing the role of educator and counselor for older people. APNs educate and counsel patients about prevention, health promotion activities, and managing chronic conditions (Chavez et al., 2018). APNs educate and provide information on disease, medication, and dietary modifications. Similarly, APNs provide health education and support to patients and families on the self-management skills of older patients (Morilla-Herrera et al., 2016). This promotes independence in managing their chronic conditions.

Similar roles were found in a study by De Leede-Brunsveld et al., (2023) where APNs provide health advice to patients and caregivers regarding self-care management. NPs also provide consultations for chronically ill patients in the follow-up in primary care practice (Josi & Bianchi, 2019).

7.4 Case Manager

Another role of APNs identified in the included studies is case management. The APN role was introduced in the UK with the goal of case management of frail older people with multiple comorbidities with a vision to reduce rehospitalization (De Leede-Brunsveld et al., 2023). According to Morilla-Herrera et al. (2016), nurse practitioners (NP) manage patients with specific

disease conditions and multi-morbidity in-home care. In collaboration with geriatricians, NPs developed care plans for patients discharged from healthcare with specific health problems.

In a study by Boman et al. (2019), the envisioned role of geriatric nurse practitioners (GNP) is case management, where GNPs could manage complex health problems and older patients with comorbidities in collaboration with other health professionals.

7.5 Non-clinical roles

Other roles that do not directly involve caring for older people were also identified in the studies. These roles are leadership and project management (De Leede-Brunsveld et al., 2023), research (De Leede-Brunsveld et al., 2023; Sevilla Guerra et al., 2022), staff education (Ljungbeck & Sjögren Forss, 2017). Nurse practitioners (NPs) educate and support other nurses to increase their staff competencies (Ljungbeck & Sjögren Forss, 2017).

They also develop health strategies (De Leede-Brunsveld et al., 2023). Advanced practice nurses (APNs) are responsible for searching for new information and upgrading their knowledge for evidence-based practice that would be applied in the care of older adults. In the Norwegian context, advanced geriatric nurses were involved in consultation and ethical decision-making regarding matters like violence among patients and families and informed consent (Henni et al., 2018).

8 Discussion

In this section, the findings of the present study, about the theoretical framework, will be discussed. This study uses the theoretical framework of Fagerström's The Caring Advanced Practice Model (Fagerström, 2021). This present study explored the roles of advanced practice nurses (ANPs) in Primary healthcare settings among older adults in Europe. In this present study, a total of 10 studies were found that described the roles of APNs (nurse practitioners and clinician nurse specialists) in the care of older adults in primary healthcare. The role of APN varies within different countries. In some studies, APNs were substituted for medical practitioners, while others have a supplementary role. According to the results of this present study, the roles are direct care provider, care coordinator and consultant, patient educator and counsellor, case manager, and nonclinical roles, which are not directly related to patient care.

The results of this study correspond to the core competencies of advanced practice nurses proposed by The Caring Advanced Practice Nursing model (Fagerström, 2021). According to The Caring Advanced Practice model, APNs should possess these eight key competencies to work in an advanced role. These competencies are Direct clinical care, Ethical decision-making, Coaching and guidance, Consultation, Collaboration, Case management, Research and development, and Leadership.

The role of APNs as Direct Care providers has been mentioned in every study included in the present study (see Chapter 7 results). This implies that the central and essential role of APNs in caring for older people in primary health care is to provide direct care. The direct care provider was also found to be the primary competency of APNs in The Caring Advanced Practice Model (Fagerstrom, 2021). Direct clinical care includes all the activities that involve taking care of the patients directly. These activities include taking history, performing physical examinations, ordering laboratory tests and interpretations, prescribing medications and other therapies, and managing chronic and complex conditions. According to Fagerström (2021), this competency is necessary for the independent role development of APNs. Similar activities were also found to be performed by APNs within this domain, according to the results of our study. According to some studies included in the present review (Henni et al., 2018; Ljungbeck & Sjögren Forss, 2017; Schönenberger et al., 2020), APNs provide holistic care to the patient, which aligns with the holistic care approach emphasized in The Caring Advanced Nursing model (Fagerström, 2021).

According to our results, not all European countries have independent prescription rights within their APN role. APNs were found to prescribe medication independently (Ljungbeck & Sjögren Forss, 2017; Sevilla Guerra et al., 2022), under the supervision of a physician (Lovink et al., 2018), or with limited prescription rights (Josi & Bianchi, 2019). The prescribing rights may vary between countries depending on the country's legislation and scope of practice (Fagerström 2021). In the UK, APNs prescribe medications independently within their scope of practice (Hill et al., 2021). In many European countries, a nurse (registered nurse/APN) can prescribe medication with limited prescription rights (Maier, 2019).

Another role of APNs found in the present study is that of care coordinator and consultant, which is similar to the competency domain of collaboration and consultation from the model (Fagerström, 2021). According to the findings of the present study, APNs collaborate with physicians and other multidisciplinary healthcare members. In collaboration with other health professionals, APNs carry out comprehensive geriatric assessments to develop personalized and holistic care plans (De Leede-Brunsveld et al., 2023; Ljungbeck & Sjögren Forss, 2017; Schönenberger et al., 2020; Sevilla Guerra et al., 2022). Collaboration between multi-disciplinary teams helps in better outcomes and satisfaction in patient groups (Fagerström, 2021). Good interprofessional communication skills are essential while collaborating. Consultation between APNs and physicians and between APNs and nurses is a common form of consultation in the APN role. These professionals' combination of expertise can provide comprehensive patient care. APNs consult with other medical professionals to seek advice. Meanwhile, others also consult APNs for advice ((De Leede-Brunsveld et al., 2023; Henni et al., 2018).

Within the role of patient educator, APNs advise patients and families about health preventive and promotive measures (Chavez et al., 2018). Guiding self-management of chronic conditions and educating older people to identify their symptoms and manage them are also part of the APN educator's role (De Leede-Brunsveld et al., 2023; Josi & Bianchi, 2019; Morilla-Herrera et al., 2016). In the Fagerström (2021) model, another essential competency domain mentioned is coaching and guidance, which has a similar essence to that of a patient educator in the present study. This model mentions APNs as coaches and emphasizes the relationship between the patient and the APN (Fagerström, 2021). A person-centered communication is an essential aspect of coaching and guidance. Similarly, APNs motivate patients to deal with their health issues or grief. This also helps involve the patient in their treatment and alleviates their suffering. Involving the patients' families is also essential to coaching and guidance, especially with vulnerable patients.

Along with this, APNs take extraordinary measures to provide preventive and promotive health information (Fagerström, 2021).

As found in the present study, an advanced practice nurse's (APN) role as a case manager is in line with one of the competencies of an APN in the model (Fagerström, 2021) i.e., case management. The findings from studies (Boman et al., 2019; De Leede-Brunsveld et al., 2023; Morilla-Herrera et al., 2016) have shown that ANP manages complex patients with multimorbidity, patients with specific diseases, and frail older people. APNs, in collaboration with multidisciplinary teams, developed individualized care plans to meet the needs of their patients. Case management aims to improve the functional ability of patients and reduce unnecessary admissions and readmissions (De Leede-Brunsveld et al., 2023; Morilla-Herrera et al., 2016). APNs have the required skills and competency to manage patient care (Fagerström, 2021). Similarly, APNs coordinate and collaborate with other health team members and services as care managers. The APN's role in case management is to help the patient manage their daily life with the condition. It is essential to involve the patient and their family and caregivers (Fagerström, 2021).

While conducting this scoping review, many other roles have come forward involving APNs in indirect care, such as researcher, project manager, leader, and staff educator. The model (Fagerström, 2021) has provided insight into leadership, research, and development competencies. These competencies can co-relate with the results found in the present study, as mentioned in the non-clinical roles. In one of the studies, APNs were found to be searching for new information and upgrading their knowledge for evidence-based practice in the care of older adults (Sevilla Guerra et al., 2022). According to Fagerström (2021), APNs have the capacity and are actively involved in leading changes. APNs are using and promoting evidence-based practices in their work that can result in quality patient care. By developing more profound theoretical knowledge and clinical skills, APNs can contribute to evaluating and developing evidence-based practice by participating in projects (Fagerström, 2021).

Another competency described in the caring advanced practice model by Fagerström (2021) is Leadership, which is similar to one of the APNs' roles in this study. The study conducted by Ljungbeck & Sjögren Forss (2017) mentions that NPs educate and support other nurses to increase their staff competencies. In the envisioned role of APNs by Boman et al. (2019), NPs were expected to help nursing staff in professional development. Similarly, APNs also involve themselves in developing strategies and project management fields (De Leede-Brunsveld et al., 2023). According

to Fagerstöm (2021), leadership is a vital role of nurse practitioners and clinical nurse specialists; however, clinical nurse specialists are more involved in leadership compared to nurse practitioners. APNs, as leaders in an organization, influence the healthcare system by implementing care strategies for better patient outcomes. Similarly, APNs are involved in changing and formulating new healthcare policies (Fagerstöm, 2021).

Another competency domain mentioned in the model is Ethical decision-making (Fagerström, 2021). The APNs are competent in identifying and solving complex ethical dilemmas. APNs have a sound knowledge of ethical theories, which helps them solve complex ethical issues encountered during their work. In this scoping review, a study that was conducted in Norway mentioned that APNs are involved in the activities of ethical decision-making (Henni et al., 2018). Similarly, APNs act as patient advocates for patient rights, especially those who are in vulnerable groups (Chavez et al., 2018).

In British Columbia, the NP role was introduced in 2007 to increase access to care and manage chronic conditions. The NPs provide direct care, manage chronic illness, collaborate with other teams, and do consultations when necessary. NPs have the training and skills to provide comprehensive patient care, taking into consideration the patient's overall health. Similarly, NPs were believed to have good communication and leadership skills within a team. These findings are similar to the present study where APNs have various roles like direct care provider, case manager, and coordinator and collaborator. (Sangster-Gormley et al., 2013)

The study conducted in the US by Grant et al. (2017), supported the idea of NPs providing holistic care to their patients in the broad spectrum of treatment and disease-specific conditions, along with their treatment plans. Encouraging a healthy lifestyle and treating and preventing existing health conditions are a few essential functions performed by APNs in primary healthcare. This study has also mentioned NPs working with vulnerable groups of the population, including frail adults. NPs collaborate with other multi-professional teams to help patients coordinate their care and act as a bridge to other service providers for patients with long-term complex health needs; NPs perform their tasks with enhanced advocacy skills. These skills support patients who usually cannot navigate the health system and voice their concerns. Although the study was done outside Europe, the findings and activities being performed by APNs are similar to the results of our study. (Grant et al., 2017)

Many of the advanced nursing roles and the activities identified in the present study correspond to the roles of APNs mentioned in the Canadian APN framework (Canadian Nurse Association, 2019). APNs work in various practice settings, performing activities ranging from direct care to indirect care, such as collaboration and consultation. NPs also care for vulnerable populations. NP provides prompt treatment by diagnosing the condition and initiating treatment that improves access to care, reduces wait times, and fulfills the shortage of medical professionals.

The findings of the present study can provide awareness of the role of advanced practice nurses. It will highlight the importance and effectiveness of advanced practice nurses (APNs) in caring for older adults. These insights can guide policymakers and organizations in Finland to recognize and integrate the role of APNs in older adult care.

In the process of literature search, not a single study was found about the roles of advanced practice nurses in the care of older adults in primary healthcare in Finland. Therefore, it was not possible to make a comparison between the roles of advanced practice nurses in the care of older adults in primary healthcare in Europe and Finland. Hopefully, this scoping review will help recognize APN roles and expertise in Finland, where the role is still in its early stages.

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9 Methodological considerations

This scoping review explored the roles of advanced practice nurses in caring for older adults in primary healthcare in Europe. The authors were relatively new to the concept of a scoping review. Also, finding the most appropriate search words was difficult, and a librarian was consulted for the data search. The most prominent search terms were used as suggested by the librarian. This may have caused the exclusion of studies with other search terms.

Another limitation is the language bias. In this scoping review, only studies in the English language were considered. This may have resulted in omitting essential studies in other languages. Although much time was devoted to searching for studies from Google Scholar, no relevant studies after the removal of duplicates were found to answer the research question. Similarly, there has been a geographical limitation. This scoping review used the studies conducted inside Europe only. In doing so, studies from other countries where the role of APN has been developed for a long time were excluded. No study was found about the role of APNs in caring for older adults in Finland. As a result, there was no possibility of comparing Finland and other European countries.

Studies that included advanced roles without master's degrees that did not meet the ICN definition were excluded. However, in these studies, the nurses' advanced roles were mentioned. Two authors have co-written this thesis. Due to the different timing schedules and commitments, the time management and schedule for writing the thesis have been complex. As this was a scoping review, the quality appraisal of the selected studies was not performed.

10 Conclusion

In Europe, the APN role was introduced at the beginning of this century to improve health access and fill the shortage of medical professionals. However, legislation is lacking in most of the European countries. Due to this, different titles are used, making the role of advanced practice nurse (APN) unclear. This scoping review has recognized the different roles of APNs in caring for older people in primary healthcare. Ten studies were identified that answered the research question. The results show that APNs have various roles within their scope of practice. These roles are direct care provider, care coordinator and consultant, patient educator, and case manager. Also, some non-clinical roles were identified. The APN competencies gained through education and training have enabled APNs to perform these advanced roles.

The result of the study is essential in healthcare. The role of APNs in primary healthcare can emphasize the competency and expertise of APNs. APNs can provide holistic care for older adults in primary health care through their gained competencies. This can help in increasing the quality of care provided for older adults. In Finland, where the APN concept is still in its infancy, we hope this scoping review helps recognize APNs and the roles APNs can perform, especially with older people in primary healthcare. Although this cannot be concrete evidence for new role development in APNs, with the help of further research, more roles can emerge in the care of older adults in primary healthcare care. This can surely help in improving the quality of aged care.

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Appendix 1. Summaries of included studies

Authors and Country	Title	Method	Aims	Main Results relevant to the research question
Boman et al, (2019) Scandinavia	Thinking outside the box': advanced geriatric nursing in primary health care in Scandinavia	Qualitative Method	To explore the feasibility of introducing geriatric nurse practitioners (GNSs) in primary health care (PHC) in Scandinavia, from multiprofessional and older persons' perspectives.	Role as a consultant and collaborator Case manager role. Autonomous roles like advanced assessment to get a diagnosis, ordering laboratory tests, X-rays, and medication adjustments
Chavez et al, (2018), Switzerland	International practice settings, interventions and outcomes of nurse practitioners in geriatric care: A scoping review	Scoping review	To identify and summarize the common clinical settings, interventions, and outcomes of nurse practitioner care specific to older people.	Providing consultations regarding prevention of chronic diseases and health promotion Providing physical assessment test, diagnosis Coordinator and consultant Educator
De Lee Burnsvilled al, (2023) Netherlands	Nurse Practitioners in Community Health Care: A Rapid Scoping Review of Their Role, Tasks, Responsibilities, and Implementation in Northwest Europe	Scoping review	To provide an overview of studies from northwest Europe that describe and evaluate community care delivered by an NP in a team of healthcare professionals.	Medical care provider Researcher Case manager Collaborator Consultant Leader Project manager and strategic developer

Henni et al,(2018) Norway	The role of advanced geriatric nurses in Norway: A descriptive exploratory study	Qualitative method	To describe the experiences of nurses with their new role as advanced geriatric nurses in the care of older adults and to determine what strategies the nurses considered important in the development of their new role	Medical care provider- Direct and indirect care Consultant Researcher Staff Educator Collaborator
Joshi & Bianchi, (2019) Switzerland	Advanced practice nurses, registered nurses, and medical practice assistants in new care models in Swiss primary care: a focused ethnography of their professional roles	Ethnographic design	To explore the newly evolving roles for APNs, registered nurses (RNs), and MPAs in PC with regard to chronic care management (CCM) in Switzerland	Medical care provider and medicine prescriber with limited rights Consultations Coordinator
Ljungbeck & Sjögren Forss, (2016) Sweden	Advanced nurse practitioners in municipal healthcare as a way to meet the growing healthcare needs of the frail elderly: a qualitative interview study with managers, doctors, and specialist nurses	Qualitative method	To investigate the opinions of managers, doctors, and nurses in primary care and municipal healthcare about the role of ANPs in municipal healthcare as a way to meet the increasing healthcare needs of the frail elderly	Role as a staff educator Medical care provider- direct clinical care, assessment, diagnosis, lab test, prescribing medicine Leader and collaborator
Lovink et al, (2018) Netherlands	Skill mix change between general practitioners, nurse practitioners, physician assistants and nurses in	Qualitative method	To describe how skill mix change is organized in daily practice, what influences it, and what the effects are of introducing NPs, PAs, or RNs into primary healthcare for older people.	General consultant Medical care provider Coordinator and collaborator

	primary healthcare for older people: a qualitative study			
Morilla-Herrera et al, (2016) Spain	A systematic review of the effectiveness and roles of advanced practice nursing in older people	Systemic review	To identify, assess, and summarize available scientific evidence about the effect of interventions deployed by APNs when providing care to older people in different settings (hospital, home, outpatient, residential) as well as to describe the roles and components of the interventions developed by these professionals.	Consultant Direct clinical care provider Case manager Collaborator
Schönenberger et al., (2020) Switzerland	Patients' experiences with the advanced practice nurse role in Swiss family practices: A Qualitative study	Qualitative method	To explore and understand patients' experiences with the APN role in Swiss family practices.	Collaborator Medical care provider Medicine adjustment Coaching and guidance
Sevilla Guerra et al, (2022) Spain	Advanced practice nurses: Analysis of their role from a multicenter cross-sectional study	Qualitative method	To identify the roles and positions of nurses who align with APN-defining criteria at all levels of care in Catalonia, Spain.	Coordinator Researcher Consultant Medical care providers with limited prescribing rights

Appendix 2. Summaries of excluded studies

Authors	Title	Method/Setting	Aims/Research question	Results	Reason for exclusion
Altermatt-von Arb et al. (2023). Switzerland	Daily practices of Advanced practice nurses within a multi-professional Primary care practice in Switzerland: a qualitative analysis	Qualitative ethnography	To describe APNs' activities and general roles at four sites with multi-professional primary care practices in the Swiss cantons of Bern and Solothurn.	Providing extended clinical practice, being on-site specialists for patients and their relatives, caring for patients in collaboration with general practitioners and other multi-disciplinary teams Patient education and counselling	The APN has not completed their study.
Buerhaus et al., (2021). USA	The roles and clinical activities of registered nurses and nurse practitioners in practices caring for older adults.	Quantitative (Survey)	To determine current RN and NP employment frequency in practices in the U.S., identify services provided by RNs, and whether NP presence in practice is associated with the types and frequency of services provided by RNs.	RNs most frequently provide teaching or education for chronic disease management. RNs provide significantly more primary care and geriatric services when practices employ an NP.	Does not answer research questions and is done outside of Europe
Carnwell and Daly, (2003). UK	Advanced nursing practitioners in primary care settings: an exploration of the developing roles	A qualitative, explorative study	Explore the current role of advanced nursing practice in primary care in the West Midlands, and how ANPs within three different nursing disciplines in primary care developed their roles over time	Leadership Consultancy Developing or changing practice, developing alternative roles, becoming involved in broader health care issues, Research.	Does not include care of older people and is beyond the time limit search set in inclusion criteria
Everett et al, (2014). USA	The Roles of Primary Care PAs and NPs	Quantitative study	Characterize the roles of PA(physician assistant)/NPs(nurse	The two most frequently performed PA/NP roles involved the delivery of	Does not answer the research question and the

	Caring for Older Adults with Diabetes		practitioners) on individual panels of primary care patients with diabetes by measuring the 3 domains ((level of involvement, patient care services provided, and complexity of patients) and describe the frequency of each role in a large, multi-specialty physician group	some chronic care as a supplemental provider (supplemental providers delivering at least some chronic care and providing at least one visit to at least one high complexity patient (17%) and supplemental providers delivering at least some chronic care to less complex patients only (13%)). PA/NPs performed a mean of 4 roles within a clinic (range 2-6). PA/NPs performed supplemental roles exclusively. Two clinics implemented supplemental roles serving less complex patients only. One clinic utilized only supplemental PA/NP roles involving chronic disease management.	study is done outside of Europe
Grant et al., (2017). USA	How do nurse practitioners work in primary health care settings? A scoping review	Scoping review	To explore the work of nurse practitioners in primary health care settings in developed countries and critique their contribution to improved health outcomes	Patient health and well-being management in a holistic manner Patient advocacy in connecting patients with different services Case management in different care settings while collaborating and consulting with the multidisciplinary team	Does not include care of older adults and the study was done outside of Europe

Hill et al., (2021). UK	The changing context of advanced practice nursing within the UK community care setting	Descriptive article	Descriptive article describing the role of APNs in community care	The main responsibilities of primary care APNs are clinical practice, research, education, and leadership.	Does not include older people's care
Hooks and Walker, (2020). England	An exploration of the role of advanced clinical practitioners in the East of England	Qualitative method	To examine how the Advanced Clinical Practitioners role is utilized in acute and primary settings and to understand its facilitators and barriers	ACP roles improved the quality of service provision, provided clinical career development and enhanced job satisfaction for staff, and required autonomous clinical decision-making, with a high degree of self-awareness and individual accountability. Barriers included disparate pay scales and funding, difficulty accessing continuing education and research, and lack of agreed role definition and title, due to a lack of standardized regulation and governance, and organizational barriers, including limited access to referral systems. The facilitators were supportive colleagues and opportunities for peer networking. Regulation of ACP roles is urgently needed, along with evaluation of the cost-effectiveness and patient experience of such roles.	Does not answer the research question and deals with the impact and effectiveness of advanced clinical practitioners

Li et al., (2021). China	Perceptions and Expectations of Advanced Geriatric Nursing Role Development in Primary Health Care: A Qualitative Study Exploring Staff's Perspectives	Qualitative method	To explore multidisciplinary members' perceptions and expectations of advanced geriatric nursing role development in primary health care.	Lack of full-time and qualified RNs resulting in unclear role definitions and low-quality care. Expectations of AGN roles in patient advocacy, case management, clinical assessment, leadership and coordination, Health information and policy development	Study done outside Europe
Morgan & Tarbi, (2016)	The role of the Advanced Practice Nurse in Geriatric Oncology Care	Qualitative method	To describe how the Advanced Practice Nurse (APN) is uniquely suited to meet the needs of older adults throughout the continuum of cancer, to explore the progress that APNs have made in Gero-oncology care, and make suggestions for future directions	Educator Medical care provider Health promotor Patient advocator Consultant Collaborator	Study done outside Europe
Neto et al., (2023). Brazil	Contributions of Advanced Practice Nursing to Primary Health Care: A Scoping Review	Scoping review	To map the contributions and strategies to implement advanced practice nursing in primary health care	APN contributions: Care practices such as vaccines, referrals, family planning advice and care for pregnant and postnatal, medicine prescription, wound care, and dressing Educational and managerial practices such as evaluating and planning home	Does not involve older people's care

				visits, health education, conducting health research, planning health training, and financial management Preventive practices such as training the nursing team, reproductive health education, stress management, weight loss, and self-care education and counselling.	
Peacock et al., (2022). USA	Adult-Gerontology Nurse Practitioners: A Discussion of Scope and Expertise	Review	To discuss the differences in education and scope of practice of adult-gerontology primary care NPs, adult-gerontology acute care NPs, and family NPs.	Not Available	Study done outside Europe
Sangster-Gormley et al., (2013) Canada	A case study of nurse practitioner role implementation in primary care: what happens when new roles are introduced?	Qualitative method	To explain the process of nurse practitioner role implementation as it was occurring and to identify factors that could enhance the implementation process.	Direct patient care including chronic disease management Leader Patient educator Collaborator and consultant	Done outside Europe
Walker and Polancich, (2015). England	Doctor of Nursing Practice: The Role of the Advanced Practice Nurse	Review	To explore the evolution and emerging roles of the Doctor of Nursing Practice (DNP) Advanced Practice Nurse (APN)	Direct patient care Educator Researcher Consultant	Does not include care for older people

				Manager Leader Change agent	
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