

ORIGINAL PAPER

Advanced Practice Nursing in Portugal – Where do we stand? *

Prática Avançada de Enfermagem em Portugal – Em que
ponto estamos?

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Abstract

Background: Portugal's health workforce has been described as an inefficient mix of resources, impacting productivity and access to health services. To address these issues, stakeholders have advocated for Advanced Practice Nursing (APN) to strengthen the nursing role and improve service delivery. **Aim:** To analyze the relevance, pertinence, feasibility, and main barriers and facilitators of APN implementation in Portugal. **Methods:** A scoping review was conducted in the CINAHL, MEDLINE Complete, PubMed, and ScienceDirect databases for peer-reviewed articles in English and Portuguese, published after 2000, on human resource configurations in health and nursing role expansion in Portugal. A review of grey literature further complemented the research. **Results:** A total of 59 studies (43 international, 16 national), 31 technical reports (17 international, 14 national), seven press articles, and two theses were screened. Findings were grouped into themes of APN conceptualization, regulation, barriers and facilitators, and funding. APN implementation depends on a consensus regarding APN conceptualization, regulation, and scope of practice. Key barriers include medical opposition, limited political commitment, and lack of comprehensive data on APNs' social and financial impact in Portugal. **Conclusions:** The implementation of Advanced Practice Nursing in Portugal is relevant and necessary, though its feasibility depends on strong leadership, political commitment, and consensus among stakeholders. Further research is essential to assess APNs' social and economic impacts within the Portuguese healthcare system.

Keywords: Advanced Practice Nursing; Healthcare Workforce; Specialists Nurses; Expanded Nursing Roles; Scoping Review.

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Resumo

Contexto: A força de trabalho na saúde em Portugal tem sido descrita como uma combinação ineficiente de recursos, impactando a produtividade e o acesso aos serviços de saúde. Para resolver estas questões, diversos intervenientes têm defendido a implementação da Prática Avançada de Enfermagem (PAE) para fortalecer o papel dos enfermeiros e melhorar a prestação de cuidados. **Objetivo:** Analisar a relevância, pertinência, viabilidade, principais barreiras e facilitadores da implementação da PAE em Portugal. **Métodos:** Foi realizada uma *scoping review* nas bases de dados CINAHL, MEDLINE Complete, PubMed e ScienceDirect para artigos revistos por pares, em inglês e português, publicados após 2000, sobre configurações de recursos humanos na saúde e expansão do papel dos enfermeiros em Portugal. A pesquisa foi complementada com uma revisão de literatura cinzenta. **Resultados:** Foram analisados 59 artigos, 31 relatórios técnicos, sete artigos de imprensa e duas teses. Os resultados foram agrupados nos temas de conceptualização da PAE, regulamentação, barreiras e facilitadores, e financiamento. A implementação da PAE depende de consenso sobre conceptualização, regulamentação e âmbito de atuação. As principais barreiras incluem oposição médica, compromisso político limitado e falta de dados abrangentes sobre o impacto social e financeiro da PAE em Portugal. **Conclusões:** A implementação da Prática Avançada de Enfermagem em Portugal é relevante e necessária, embora a sua viabilidade dependa de uma liderança forte, compromisso político e consenso entre *stakeholders*. São necessários mais estudos para avaliar os impactos sociais e económicos da PAE no sistema de saúde português.

Palavras-Chave: Prática Avançada de Enfermagem; Força de Trabalho em Saúde; Enfermeiros Especialistas; Expansão de Funções dos Enfermeiros; Revisão de Escopo.

Introduction

The healthcare workforce represents the most significant expense and the primary investment in healthcare delivery. Therefore, healthcare systems' performance is strongly dependent on the availability, accessibility, acceptability, and quality of their healthcare professionals ([World Health Organization \[WHO\], 2013](#)).

Projections indicate that the global shortage of healthcare professionals, currently exceeding seven million, may reach 12.9 million in the coming decades ([WHO, 2016](#)). This challenge, intensified by resource shortages, increased pressure to control costs, a rising demand driven by an aging population, the increase in chronic diseases ([Torrens et al., 2020](#)), and recent pandemics ([De Reave et al., 2023](#)), has urged new care models. Among these, task-shifting strategies—particularly from physicians to nurses via Advanced Practice Nursing (APN) roles—are seen as efficient solutions ([Maier & Aiken, 2016](#); [Wheeler et al., 2022](#)).

The APN emerged in the early 1960s in the United States, expanding rapidly through the late 20th century. Its development and expansion were propelled by a combination of socio-political and professional forces addressing workforce challenges, such as the shortage of physicians in remote and rural areas and the need for specialized nursing care adequate to the population's demands ([Torrens et al., 2020](#)).

Throughout the 1970s, 1980s, and 1990s, the concept evolved and gained prominence in countries like the United Kingdom, Canada, and Australia. Since then, it has continued to expand globally, albeit at varied paces, driven largely by workforce shortages, challenges in accessibility—especially in underserved and resource-limited areas—and the demand for improved cost-effectiveness and efficiency ([Maier et al., 2017](#); [Newhouse et al., 2011](#); [Torrens et al., 2020](#)).

The APN represents a specialized level of nursing practice involving extended and enhanced skills, expertise, and knowledge acquired through additional graduate education, typically at least a master's degree, in assessment, planning, implementation, diagnosis, and evaluation of care (International Council of Nurses [ICN], 2020). The two most frequently identified APN roles are Clinical Nurse Specialist and Nurse Practitioner (ICN, 2020; Wheeler et al., 2022). These practitioners provide a wide range of services, often including primary, acute, and specialized healthcare, with a high degree of autonomy and authority in decision-making regarding patient care (ICN, 2020).

Although the ICN provides an inclusive definition, emphasizing that APN roles are shaped by the context of credentialing (ICN, 2020), significant global variation exists in APN titles, roles, scopes of practice, and academic regulation, which may limit and constrain the practice (Bryant-Lukosius et al., 2017; Kleinpell et al., 2014; Torrens et al., 2020). To mitigate these inconsistencies, countries with longer histories of APN implementation have developed frameworks, guidelines, and national consensus models to standardize APN definitions, competencies, education, roles, regulations, and certification (De Reave et al., 2023).

Countries considering or currently implementing APN roles could benefit from adopting standardized frameworks, which foster a shared understanding of the APN role among healthcare, public, and policy stakeholders while promoting a standard (De Reave et al., 2023). An increasing body of research demonstrates that Advanced Practice Nurses (APNs) improve accessibility, enhance clinical outcomes, contain costs, and advance quality and safety (Casey et al., 2017; De Reave et al., 2023; Delamaire & LaFortune, 2010; DiCenso et al., 2010; Evans et al., 2020; Laurent et al., 2018; Maier et al., 2017; Newhouse et al., 2011), as well as contribute to staff retention (ICN, 2020; Kroezen et al., 2015). In response, several countries have been working on the implementation of APN (Wheeler et al., 2022), advocating that it can be a cost-effective way to deal with the health systems challenges, including emerging issues, such as pandemics (De Reave et al., 2023).

Currently, an estimated 40 countries have formally recognized and consolidated APN roles (Wheeler et al., 2022). Countries such as England, Canada, and Australia have public healthcare systems with policies and values closely aligned to those in Portugal. Nevertheless, reluctance to APN implementation in Portugal remains (Buchan et al., 2013; Temido et al., 2015) despite the widely documented benefits that it can bring to health systems' sustainability (Evans et al., 2020). The composition of the health workforce in Portugal has been described as an inefficient combination of resources, impacting productivity and accessibility to healthcare services (Buchan et al., 2013; Entidade Reguladora da Saúde [ERS], 2011). Therefore, various stakeholders have defended the review of the scope of the professional practice of nurses, claiming that restructuring the skill mix between doctors and nurses—expanding nursing roles and delegating specific tasks from doctors to nurses—could serve as a cost-effective strategy to deal with demographic challenges

and operational limitations within the Portuguese NHS (Buchan et al., 2013; Dussault & Fronteira, 2010; ERS, 2011).

The topic remains controversial, with healthcare professionals divided—some strongly supporting APN implementation while others firmly oppose it (Buchan et al., 2013). Arguments on both sides are varied and often contradictory (Nunes, 2021). Additionally, the public and certain stakeholders express reservations about the APN scope of practice and its potential effects on healthcare quality, patient safety, and costs, resulting in social reluctance and limited support for expanding nursing roles.

In Portugal, medical professional organizations strongly oppose the expansion of nursing roles (“Ordem dos Médicos contra ascensão dos enfermeiros,” 2012; Ordem dos Médicos [OM], 2009, 2013; Temido & Dussault, 2014), arguing that this would assign medical competencies to nurses, framing it as a populist, ineffective, and potentially harmful measure (OM, 2013). They contend that such changes could compromise the safety and quality of care without addressing core healthcare system issues (Campos, 2017; OM, 2013, 2015).

Contrarywise, nurses and their representatives assert that there has been little to no change in nursing roles over the years despite the growing number of specialist nurses with master's and doctorate degrees (Fronteira et al., 2020; Lopes et al., 2018; Simões et al., 2017). They argue that the time has come to officially recognize these professionals as APNs, allowing them to practice to the fullest extent of their knowledge and training (Barreira, 2019; Lopes et al., 2018).

The competencies of specialist nurses are certified by the Nursing Council (Ordem dos enfermeiros [OE], 2018, 2019) and align with those established by the ICN for the APN, encompassing clinical proficiency, leadership, management, education, and research (ICN, 2020). However, the scope of advanced practice for specialist nurses remains significantly restricted, as specific tasks commonly performed by APNs internationally are not included in Portugal's legal framework governing nursing (Decreto-Lei n.o 161/96, de 4 de setembro, 1996; OE, 2018, 2019). Currently, nurses have restricted or nonexistent authority to diagnose diseases, prescribe medications, order diagnostic tests and therapeutic interventions, refer patients between care levels, and admit or discharge patients in hospitals and other settings (Maier & Aiken, 2016).

Additionally, there are ongoing internal divisions concerning APN implementation (Fronteira et al., 2020). While some nurses perceive it as a natural evolution of the nursing profession (Barreira, 2019; Lopes et al., 2018), others see it as a *medicalization* of nursing, lacking scientific integrity, a clearly defined scope, and the foundational autonomy of nursing practice (Almeida & Coelho, 2010; Queirós, 2017). Critics argue that APN primarily aims to replace higher-paid healthcare professionals (medical doctors) with lower-paid nurses, potentially undermining the profession (Almeida & Coelho, 2010; Peixoto & Peixoto, 2013).

Professional interests, medical opposition, ambiguity about APN roles and scope of practice, education and training adequacy, legislative and regulatory barriers, as well as funding and financial

mechanisms, are well-documented obstacles to implementing APN (Delamaire & LaFourniture, 2010; Torrens et al., 2020; Wheeler et al., 2022).

Despite these barriers, countries with established APN roles, such as the United Kingdom and Canada, have successfully addressed them through strategies including regulatory reforms, interprofessional collaboration, and public advocacy (De Raeve et al., 2023; Mackavey et al., 2024; Maier & Aiken, 2016; Torrens et al., 2020). Key initiatives to facilitate APN implementation and development include establishing standardized frameworks to clarify competencies and roles, thereby minimizing role ambiguity among healthcare teams. Additionally, educating stakeholders about APN scope and competencies, fostering collaboration among APNs, physicians, and policymakers, and enacting legislative changes—particularly in prescribing authority and independent patient management—have expanded APN roles. Further efforts included securing stable funding mechanisms, creating specialized educational and certification programs, and raising social and political awareness, led by government and nursing organizations, to gather broader support for APN-led healthcare initiatives. Finally, evaluating and disseminating APN outcomes has also enhanced recognition of the APN's impact within healthcare systems (De Raeve et al., 2023; DiCenso et al., 2010; Mackavey et al., 2024; Maier & Aiken, 2016; Torrens et al., 2020). Building on these insights and acknowledging the limited evidence regarding APN roles in Portugal (Buchan et al., 2013), this paper aimed to provide a comprehensive overview of the current state of APN implementation in the country. Specifically, it assessed the relevance, pertinence, and feasibility of the APN through a scoping review focused on the composition of the health workforce and the expansion of the nursing role in Portugal.

Method

Study Design

A scoping review on the combination of human resources in health and the expansion of the nurse role in Portugal through APN implementation was conducted. Scoping reviews are ideal for mapping the existing literature and presenting an overview of emerging topics (Munn et al., 2018), as they help identify key concepts, gaps in research, types and sources of evidence to inform practice, policymaking, and further investigation (Daudt et al., 2013).

This review included both peer-reviewed and gray literature, as formal research on the topic is sparse, and we aimed to gain a comprehensive understanding of the topic. Peer-reviewed sources encompassed primary studies, systematic reviews, guidelines, and policy documents. The gray literature included press articles, government and NGOs' documents, reports and working papers, unpublished documents, conference presentations, theses, and legislation.

The methodology followed the Joanna Briggs Institute (JBI) framework, involving key phases: defining the research question using the PCC mnemonic; systematically searching PubMed,

ScienceDirect, CINAHL, and MEDLINE Complete; applying inclusion and exclusion criteria; mapping, grouping, and analyzing data; and synthesizing and reporting results (Peters et al., 2020).

The main Research Questions (RQs) that guided the scoping review were defined according to the Population (healthcare stakeholders), Concept (Advanced Practice Nursing), and Context (Portugal) mnemonic, and it was: "Is APN implementation in Portugal relevant, pertinent, and feasible according to healthcare stakeholders?"

In order to answer this broader research question, four other auxiliary questions, also defined according to PCC, were used:

RQ1. What are the main causes identified by healthcare stakeholders for APN implementation in Portugal?

RQ2. What is the conceptualization that healthcare stakeholders (policymakers, health system managers, policy analysts, and healthcare workers) make of APN in the Portuguese context?

RQ3. What are the barriers and facilitators to APN implementation in Portugal identified by healthcare stakeholders?

RQ4. According to healthcare stakeholders, which outcomes could be influenced by APN implementation in Portugal?

The research questions were initially applied to an international context to broaden the scope and increase the sensitivity of the search results, which were highly restricted when limited to the Portuguese health context.

Data Collection

An exploratory electronic search on PubMed, ScienceDirect, CINAHL (through EBSCOHOST), and MEDLINE complete (through EBSCOHOST) databases was carried out using the terms "advanced practice nursing," "advanced practice nurse," "advanced nurse practice," "advanced nursing practice" to map key concepts, language, terminology, and clarify issues regarding the conceptualization of APN implementation policies, such as the scope of the APN, barriers and facilitators to its implementation, regulation and outcomes achieved.

Given the large volume of initial results, the search strategy was refined by limiting the search to articles published after 2000, written in English or Portuguese, and focusing on key terms found in titles, abstracts, or keywords. This approach ensured the inclusion of the most relevant and recent literature.

Boolean operators (e.g., 'OR' and 'AND') were critical in addressing terminological variations commonly encountered in APN literature. Wildcards were also employed to account for plural forms and spelling variations, ensuring a more comprehensive search across databases.

Articles focusing on a specific nurse provider or nursing area/specialty were excluded to obtain a global and comprehensive view of the APN and not that of a specific APN provider.

Considering the limited formal research on the APN in Portugal, gray literature—including policy reports from health workforce planning organizations, legislative documents, and dissertations—was essential for gaining a broader perspective. This approach enabled the incorporation of valuable insights from non-peer-reviewed sources.

Data Analysis

Ryvan® was selected to manage the screening process due to its collaborative features, which allowed multiple reviewers to work together efficiently. Two independent reviewers applied predefined criteria to evaluate eligibility, while a third reviewer addressed any discrepancies, ensuring a thorough and rigorous selection process.

Content analysis followed Bardin's (2009) methodology, which was chosen for its applicability in analyzing qualitative data from diverse sources, including gray and peer-reviewed literature. The thematic analysis identified five key areas: APN conceptualization, regulation, barriers and facilitators, financing methodologies, and outcomes.

After the selection process, evidence synthesis was performed, as indicated by JBI. The results were reported descriptively within a narrative synthesis that comprised a description of the results combined with tables.

Results

We identified 576 records from databases, eight from citation searching, and 35 from Google search, of which seven were press articles, two doctoral theses, one conference presentation, and 25 technical reports.

Three hundred thirty-three records from the databases were removed by duplication, and 136 were excluded based on abstract and title screening.

Of the 107 reports retrieved for full-text assessment, 34 were excluded due to restricted access or paywalls. Of the 73 eligible reports, 14 were excluded as they focused on specific advanced nurse providers (advanced nurse practitioner, clinical nurse specialist) or specific care provision areas (e.g., critical care, palliative care). These exclusions were implemented to ensure a comprehensive overview of APN as a whole rather than focusing on its application in niche settings, thereby preserving the broader scope of the scoping review.

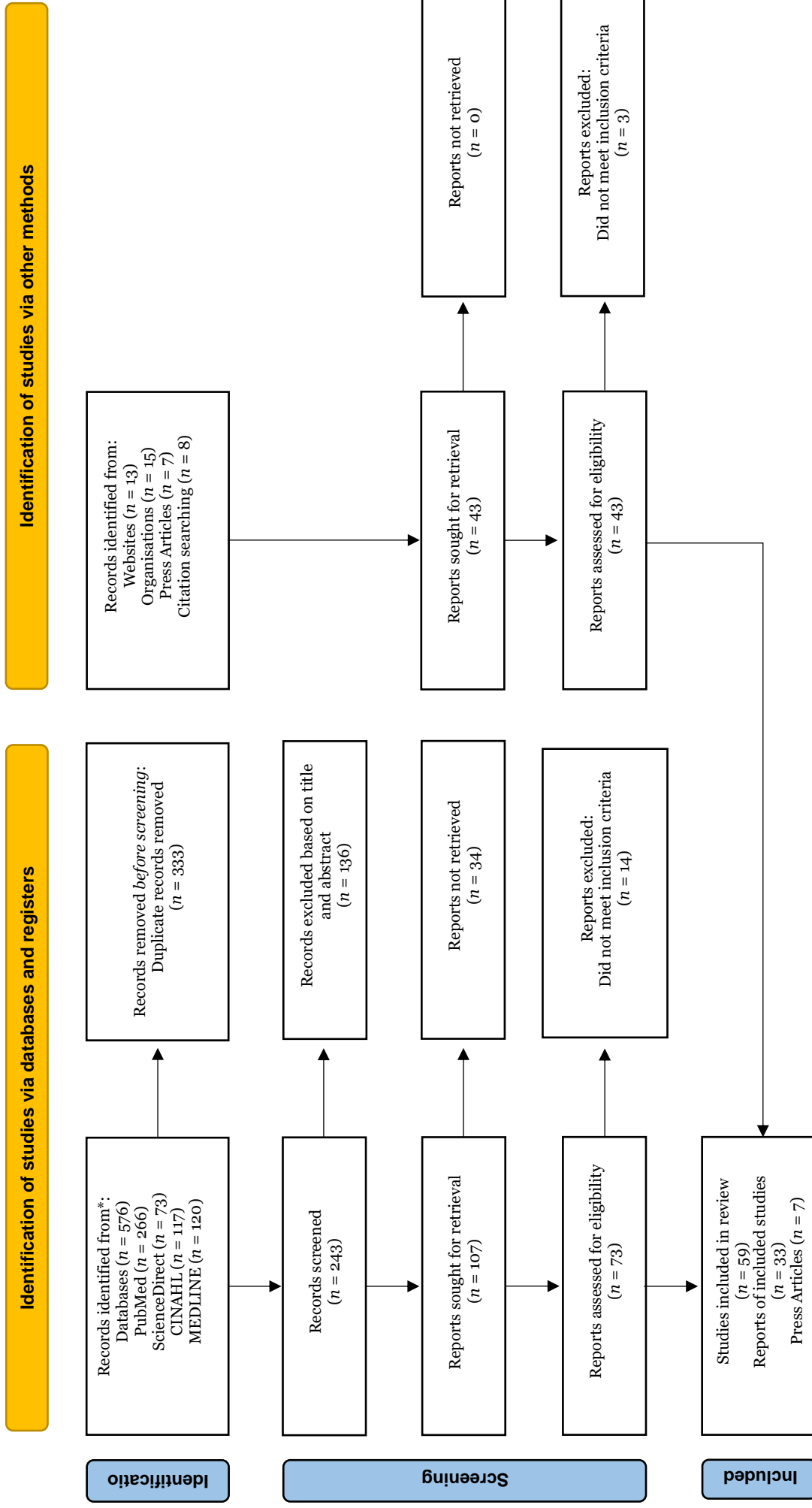
In total, 59 studies (43 international, 16 national), 31 technical reports (17 international, 14 national), two doctorate theses, and seven press articles were screened.

A PRISMA flow chart documents the search and selection process (Figure 1).

Most international documents were from Anglo-Saxon countries, including the United States, the United Kingdom, Canada, and Australia.

Figure 1

PRISMA 2020 Flow Diagram for Scoping Review



Note. Adapted from "The PRISMA 2020 statement: an updated guideline for reporting systematic reviews," by M.J. Page, J.E. McKenzie, P.M. Bossuyt, I. Boutron, T.C. Hoffmann, C.D. Mulrow, et al., 2021, *BMJ*, 372, Article n71 (<https://doi.org/10.1136/bmj.n71>). Copyright 2021 by BMJ Publishing Group.

Discussion

Globally, healthcare organizations, policymakers, and healthcare system managers have been increasingly focused on reorganizing healthcare workforces. By adopting innovative approaches and initiatives, they aim to optimize personnel distribution and skill mix to provide high-quality, sustainable care (De Raeve et al., 2023; Maier et al., 2017). The APN has emerged as one of the key strategies within this framework.

Achieving the optimal skill mix of healthcare personnel by identifying the most effective combination of staff that can be attained with the available resources has become a priority for managers, aiming to balance available resources with population needs and local priorities (Buchan & Dal Poz, 2002). As part of this strategy, the role of nursing has been increasingly strengthened, with the APN emerging as a crucial element of skill mix policies worldwide (Buchan & O'May, 2000). In Portugal, these international trends are equally relevant as policymakers seek to address workforce challenges. Among the various skill mix strategies, task shifting has gained significant attention (Fulton et al., 2011), particularly strategies that involve a redefinition of roles between medical and nursing professions (Buchan & Calman, 2004; Delamaire & Lafortune, 2010), such as APN.

The positive impact of the APN on clinical outcomes, quality of care, cost-effectiveness, and satisfaction of both users and professionals has been well-documented internationally (Casey et al., 2017; DiCenso et al., 2010; Delamaire & Lafortune, 2010; De Reave, 2023; Evans et al., 2020; Laurent et al., 2018; Maier et al., 2017; Newhouse et al., 2011). However, its implementation remains controversial among key stakeholders (Kaasalainen et al., 2010; Kleinpell et al., 2014; Pulcini et al., 2010). Several barriers must be addressed, including inconsistencies in the definition, role, and scope of practice; a lack of comprehensive legislation and regulation, which can give rise to conflicts with other healthcare professionals; unsuitable models for care organization and financing, which may not provide adequate payment mechanisms for APN services; insufficient education and training opportunities; and a limited evidence base for APN outcomes in specific settings (Buchan & Calman, 2004; Delamaire & Lafortune, 2010; Kleinpell et al., 2014).

Given these challenges, it is critical to thoroughly assess the relevance, pertinence, and feasibility of APN policies, particularly in the context of healthcare systems like Portugal's, where workforce planning and strategic policymaking must consider local needs and resources.

The configuration of the workforce and the combination of skills are often a product of history, prejudice, and culture (Payne & Keep, 2003). Thus, the position regarding the implementation and performance of the APN is also strongly influenced by the beliefs, values, and image that civil society, healthcare professionals, and other stakeholders have of the nursing profession.

Modern nursing in Portugal has its roots in the 1950s, emerging in response to a medical need for more qualified clinical assistants (Nunes, 2003). Nursing in Portugal evolved from its religious origins in the 19th century, with the first formal course introduced in 1881 at the University Hospitals of Coimbra. By the 1950s, nursing gained social and financial recognition, which was marked by the

establishment of a three-year nursing course and administrative autonomy for nursing schools. These developments were further solidified by the creation of the National Health Service in 1979, which formalized the nursing profession (Ordem dos Enfermeiros [OE], 2008). This relatively recent history has influenced the current development of APN roles in the country.

The Portuguese Nursing Council confers the title of *Specialist Nurse* in Portugal to professionals who simultaneously have a degree in nursing, at least two years of professional experience as a nurse, and a postgraduate degree in one of the following: maternal and obstetric health nursing, child and pediatric health nursing, mental and psychiatric health nursing, community nursing, rehabilitation nursing or medical-surgical nursing (OE, 2019). The Regulation of the Common Competences for Specialist Nurses (OE, 2019) states that the title of specialist nurse encompasses a set of core skills applicable across all healthcare contexts. These skills include client and peer education, guidance, counseling, and leadership, as well as the responsibility to interpret, disseminate, and conduct relevant research aimed at advancing and continuously improving nursing practice. Consequently, these qualifications and competencies align with the ICN's definition for APN.

In recent years, there has been an exponential increase in specialist nurses, who now represent approximately 30% of all active nurses in Portugal (Fronreira et al., 2020).

Despite the increasing professional differentiation among Portuguese nurses, the division of tasks between doctors and nurses has mainly remained unchanged (Lopes et al., 2018; Silva et al., 2018), regardless the efforts of legal representatives such as the Nursing Council and nursing unions (Buchan et al., 2013; Fronreira et al., 2020; Temido & Dussault, 2014).

Although it is widely recognized that specialist nurses possess the knowledge and skills to perform more complex and autonomous tasks—such as managing chronic diseases, following up on low-risk pregnancies, prescribing certain medications, and interpreting diagnostic tests (Lopes et al., 2018; Silva et al., 2018)—their formal roles have seen little to no expansion in practice (Fronreira et al., 2020).

Multiple stakeholders have advocated for the expansion of the scope of practice for nurses, who now represent about a third of the total Portuguese NHS workforce (Buchan et al., 2013; ERS, 2011; Lopes et al., 2018; Nunes, 2021; Silva et al., 2018; Temido, 2014; Temido & Dussault, 2014; WHO, 2010). Stakeholders argue that the current composition of the health workforce reveals inefficiencies in the division of roles between doctors and nurses. Therefore, a review of the skill mix could reduce the costs of care (ERS, 2011), improve access to services, and enhance satisfaction among both users and healthcare professionals, while also addressing demographic challenges more effectively (Buchan et al., 2013; ERS, 2011; Temido & Dussault, 2014).

Advocates argue that some tasks currently performed by doctors can be safely delegated to other healthcare professionals, particularly nurses, without compromising the effectiveness or quality of care. This would also improve access to care by allowing doctors to focus on patients who specifically require medical attention (ERS, 2011; Buchan et al., 2013).

In addressing the first and second questions of the present scoping review, national and international stakeholders agree that the implementation of APN in Portugal is both relevant and necessary. The reasons supporting APN in Portugal align with those that have driven its adoption in other countries (Buchan et al., 2013; Dussault & Fronteira, 2010; ERS, 2011; Fundação Calouste Gulbenkian [FCG], 2014; Nunes, 2021; Temido, 2014; WHO, 2010).

However, the feasibility of APN implementation in Portugal requires further investigation, particularly to understand why the scope of nursing practice has been so little extended when compared to other countries since international evidence suggests that, with the right training and specific conditions, task shifting can improve access to care and user satisfaction without compromising quality or safety (FCG, 2014, pp. 148–149).

APN Conceptualization

The ICN defines the APN as a professional practice performed by an accredited registered nurse with an expert knowledge base, complex decision-making skills, and clinical competencies for expanded practice. These characteristics are shaped by the context or country where the nurse is credentialed to practice (ICN, 2018, 2020). The APN practice follows significant clinical experience, specialization, and/or postgraduate training, with a master's degree recommended by ICN for entry-level roles (ICN, 2018, 2020).

APNs are trained to anticipate and manage complex health conditions and have the autonomy to perform tasks and procedures traditionally reserved for physicians, including diagnosing and prescribing medication and treatments. They also handle patient admission, discharge, referral between care levels, disease management, education, and health promotion (Department of Health [DoH], 2010; Gardner et al., 2007; ICN, 2020; Pulcini, 2009; Royal College of Nursing, 2019). The APN also integrates research, education, management, provision of consultancy services to health service providers, program planning, implementation, and evaluation (ICN, 2020; Royal College of Nursing, 2019).

In Portugal, the term APN is still relatively unknown and does not seem to gather consensus among stakeholders. Among the Portuguese nursing community, the designation APN is a topic of discussion, and the dichotomous view that remains in nursing: a more biomedical perspective or a more humanistic approach emerges as fracturing (Queirós, 2017; Silva, 2007).

While some nurses see the APN as a natural and inevitable progress of nursing, others consider it unreasonable and a step back as they believe that APN entails *more medicine in nursing*. The bibliography also distinguishes between advanced nursing practice and advanced practice nursing, stating that while the first intends to *add nursing to nursing*, presenting itself as a disciplinary philosophy for the development of practice based on pillars that must be transversal to nursing, such as disciplinary knowledge, training, research, reflection, evidence-based practice, leadership and implementing change, the second intends to *add medicine to nursing*, presenting itself as a setback in history (Almeida & Coelho, 2010).

In Portugal, the concept of APN is often associated with the expert practice, particularly embodied in the specialist nurse role (Lopes et al., 2018; Queirós, 2015, 2017). This association reflects a disciplinary approach that prioritizes *more nursing in nursing*. Thus, considering the ICN definition, the APN role seems to have its counterpart in Portugal, the specialist nurse.

Within this context, a study by Nunes (2021) explored the views of Portuguese specialist nurses on APN implementation, finding that these nurses conceptualized APN as an autonomous, specialized practice rooted on scientific evidence and focused on improving care quality and efficiency. Although specialist nurses consider that there is national and international ambiguity and lack of consistency in the definition and role of APN, they seem to value an APN based on the expansion of disciplinary knowledge, training, research, evidence-based practice, and leadership. The integration of medical competencies and tasks does not seem to be the central component in the conceptualization that specialist nurses make of APN. However, most believe it may also include performing tasks often considered medical, such as prescribing medication, managing chronic disease, prescribing and interpreting tests and exams. Specialist nurses state, nevertheless, that some medical tasks could be delegated to nurses, thus contributing to the sustainability of the Portuguese NHS by promoting efficiency within the multidisciplinary healthcare teams. Most specialist nurses claim to perform tasks that can already be classified as APN, according to international conceptualization given by the ICN (Nunes, 2021).

Healthcare stakeholder's conceptualization on APN does not gather consensus as healthcare policymakers and managers view APN as a cost-effective policy (Barros, 2011; Buchan et al., 2013; ERS, 2011), while doctors perceive it as a threat to their professional territory and a cost-containment measure that could jeopardize patient safety (Temido, 2014; Temido et al., 2015). Nurses hold widely divergent views: some regard it as a dishonest and unethical strategy aimed at increasing their workload and responsibilities without adequate compensation (Temido et al., 2015); others see it as a distortion of the nursing profession by introducing *more medicine in nursing* (Queirós, 2017; Silva, 2007); and yet others view it as a means of advancing the nursing profession by granting nurses the autonomy to practice to the full extent of their knowledge (Nunes, 2021).

APN Regulation

Regulatory mechanisms are pivotal for the successful implementation of APN across different healthcare systems (Dubois & Singh, 2009). However, variability in regulatory frameworks, educational requirements, and scope of practice poses significant challenges for APN implementation globally and in Portugal (De Raeve et al., 2023; Heale & Buckley, 2015; Sangster-Gormley et al., 2011). This variability can result in constraints in APN practice (De Raeve et al., 2023; Heale & Buckley, 2015; King et al., 2017; Pulcini et al., 2010).

In Portugal, the nursing practice is regulated by the Nursing Council, which issued the *Regulation of Professional Nursing Practice* in 1998. This document defines the concepts, interventions, rights, and duties of all nurses, with its provisions applicable across all employment contexts.

The competencies of specialist nurses include client and peer education, counseling, leadership, and responsibility for conducting and disseminating research to advance nursing practice. Specialist nurses also hold professional, ethical, and legal responsibilities, are involved in continuous quality improvement, and contribute to healthcare management and professional education (OE, 2019).

The competencies related to professional, ethical, and legal responsibility guarantee that specialist nurses develop their practice within the area of their specialty, adhering to legal norms, ethical principles, and professional deontology. These competencies also uphold respect for human rights and professional accountability in nursing practice. In continuous quality improvement, specialist nurses are expected to play a proactive role in advancing institutional strategic initiatives related to clinical governance by managing and participating in ongoing improvement programs and ensuring a therapeutic and safe environment. Competencies in healthcare management involve overseeing nursing care, optimizing team responses, and coordinating effectively with the broader healthcare team. This includes adapting leadership styles and resource management to meet specific situational and contextual demands to uphold healthcare quality standards. Finally, competencies in professional education development encompass assertiveness and specialized clinical practice grounded in scientific evidence (OE, 2019).

It seems, therefore, that there are shared skills, qualifications, practice characteristics, and regulatory mechanisms between specialist nurses practicing in Portugal and the APN role as defined internationally. However, a recurrent and divisive topic in the literature regarding APN implementation in Portugal is the issue of nurses prescribing medication and treatment plans, as well as ordering and interpreting diagnostic and laboratory tests (Baltazar, 2014; Barreira, 2019; Borja-Santos, 2015).

Although prescribing remains limited in Portugal, Decree-Law No. 9 (2009) allows specialist nurses in Maternal and Obstetrical Health to diagnose pregnancy, monitor normal pregnancies, and prescribe tests to diagnose high-risk pregnancies early. While the prescription of medications and exams is legally permitted, there is no provision for the reimbursement of tests and exams ordered by these nurses for monitoring low-risk pregnancies, creating a financial burden for users. Furthermore, nurses can legally prescribe pharmacological therapy in emergencies to restore and maintain vital functions (Decreto-Lei n.o 161/96, 1996). These legislative provisions suggest a regulatory foundation for more effective utilization of nurses' competencies, potentially enhancing the performance of the Portuguese Health System (Temido, 2014; Temido & Dussault, 2014).

Barriers and Facilitators to APN Implementation

The main barriers to APN implementation identified in the literature include: ambiguity regarding the role of advanced practice nurses, restrictive or outdated legislation, lack of education and resources, work overload, insufficient financing and reimbursement schemes, limited political and managerial support, and resistance by the medical profession (Bryant-Lukosius, 2004; Bryant-

Lukosius et al., 2017; Kleinpell et al., 2014; Lowe et al., 2011; Maier et al., 2017; Pulcini et al., 2010; Sangster-Gormley et al., 2011; Torrens et al., 2020; Wheeler et al., 2022).

Governance, regulation, and healthcare management policies were, therefore, identified as critical policy facilitators, as advanced clinical scope-of-practice, finance and reimbursement policies, relevant education programs and the integration of new advanced roles in practice depend on them (Maier et al. 2017; Wheeler et al., 2022).

APN implementation in Portugal has been recommended by various stakeholders since 2010 (ERS, 2011, 2014; FCG, 2014; Simões et al., 2017; WHO, 2010). Multiple reports and studies have advocated delegating certain medical tasks to nurses, expanding the nursing scope of practice, and increasing professional autonomy (Barros, 2011; Buchan et al., 2013; Fronteira et al., 2020; Temido, 2014; Temido & Dussault, 2014; Temido & Dussault 2015; Temido et al., 2015).

Despite the growing professional differentiation of Portuguese nurses (Fronteira et al., 2020; Lopes et al., 2018), and notwithstanding the recognition that specialists' nurses have knowledge and skills that allow them to carry out more complex and autonomous activities, such as chronic disease management, low risk pregnancy follow up, prescription of some medication and analysis of some complementary exams, the activities formally performed by nurses have undergone little or no changes (Fronteira et al., 2020), regardless of the efforts made by legal representatives, such as the Nursing Council and nursing unions.

This review identified several reasons for the lack of progress in APN implementation in Portugal, including the relative availability of doctors compared to nurses (OECD, 2019), strong opposition from the medical professions (Borja-Santos, 2015; Campos, 2017; Pinto, 2017) and a lack of consensus regarding the conceptualization and role of the APN (Almeida & Coelho, 2010; Peixoto & Peixoto, 2013; Queirós, 2017; Silva, 2007; Temido et al., 2015). Additionally, restrictive regulation and a lack of political commitment further hinder APN (Fronteira et al., 2020; Nunes, 2021; Temido, 2014).

A common argument against expanding nurses' competencies in Portugal is the relative availability of doctors compared to nurses, as the country has a nurse-to-inhabitant ratio of 6.7 per 1,000, compared to 8.8 in other OECD countries, and a nurse-to-doctor ratio of 1.3 compared to 2.7. However, the literature suggests that these numbers may be skewed due to differences in data reporting methodologies (OECD, 2019). The diagnosis of nurse's unavailability arises in the context of unemployment and unprecedented emigration rates among Portuguese nurses (OE, 2024; Pereira, 2015).

Although, the introduction of APN has historically appeared in the context of a shortage of doctors, that however does not seem to be the case in the Portuguese context. Nevertheless, this argument has been used to argue against the expansion of nursing practice, the OECD (2019), however, believes that there is an overestimation of the doctors/1000 inhabitants' ratio by about 30%. If this was not the case, inequities and asymmetries in the distribution of doctors throughout the country, the aging of the medical profession, shortages of general practitioners, long waiting lists for specialty consultations and surgeries (Correia et al., 2018, 2020; ERS, 2019; Lopes et al., 2018; Santana et al.,

2014; Schreck & Amorim, 2019) would suffice to counter this argument and support the implementation of APN.

Regarding corporate and professional interests, there is, as in other countries, strong medical opposition to the expansion of the nurses practice, which can be partially explained by the unfamiliarity and wrong conceptualization of APN, the strong emphasis given to the substitution of doctors by nurses, which results in the interpretation of APN as a threat to medical professional territory, and also by the perception of nurses insufficient training, as observed by Nunes (2021) and Temido et al. (2015).

As highlighted by Torrens et al. (2020) ambiguity surrounding the definition of APN is often associated with a lack of understanding and acceptance by peers, which makes it difficult to develop a collaborative practice among healthcare professionals. Such appears to be the case in Portugal. Inconsistencies and misperception regarding APN definition, role and autonomy seem to have a preponderant part in the reluctance to APN implementation and dissemination in Portugal as doctors seem to perceive their professional territory threatened by APN implementation (Temido et al., 2015) and nurse's conception of APN differs (Nunes, 2021).

Among nurses, the exercise of APN does not always find consensus, as some nurses are against delegation of medical tasks to nurses, since they consider it a paradox in the nursing profession and a way of introducing "more medicine in nursing", but also because they see it as a dishonest and immoral strategy that aims to give more work and responsibility without monetary compensation to nurses (Nunes, 2021).

This lack of consensus between different stakeholders, i.e. health managers, nursing and medical councils' representatives, researchers', ministries of health and education, employers and regulators, on APN implementation in Portugal, has been evidenced by Buchan et al. (2013).

The absence of political commitment has also been pointed out by the national evidence (Buchan et al., 2013; Nunes, 2021; Temido, 2014) as advanced role(s) and associated educational requirements, certification and regulation, career structure and payment systems and potential impacts on organizations, other health professionals and the impact on healthcare services accessibility is yet to be assessed and discussed.

Model of Organization of Care and Funding Mechanisms Suitability for APN

Financial resources and appropriate compensation models are essential for the success of skill mix strategies, as financial incentives significantly influence the redefinition of professional roles (Bourgeault et al., 2008; Buchan & Calman, 2004).

In Portugal, healthcare is predominantly financed through taxes with the NHS and Regional Health Services accounting for 57.3% of expenditure (Conselho Nacional de Saúde [CNS], 2017). Prior to the pandemic, Human Resources for Health (HRH) were accountable for over 21% of the Portuguese NHS costs, consuming around 50% of total hospital financing (CNS, 2017).

Nursing represents the largest segment of the healthcare workforce in Portugal. Approximately 62% of the Portuguese nurses work within the public health service (hospitals and primary healthcare), around 5% in the private sector (clinics and private healthcare facilities) and about 2% in private institutions of social solidarity, care homes and independent practice (Correia et al., 2018). The predominant form of remuneration for nurses, in both public and private sectors, is salaried. Additionally, mechanisms to encourage productivity sometimes exist, leading to supplementary payments when predefined and contracted targets are met, such as in Family Health Units, where remuneration may also include pay per act performed or per patient attended. Independent practice commonly involves payment per act.

Since the main form of remuneration of Portuguese nurses is salaried, with supplementary systems that include team-based performance incentives—particularly in primary care through Family Health Units—and production-based incentives, it can be concluded that the current payment mechanisms for nurses favors APN implementation.

The nursing career within the Portuguese National Health Service was last reviewed in 2019 and includes three categories: nurse, specialist nurse and nurse manager. Currently, nurses often perceive their remuneration and career progression opportunities as unjust and inadequate, contributing to high rates of intention to abandon the profession (Poeira et al., 2019). Although the wage gap between nurses (€1,333.35 per month) and specialist nurses (€1,543.88 per month) may initially suggest a financial incentive for APN, remuneration inequalities prevail across the healthcare system (Henriques, 2019). Additionally, the quota-based system for professional advancement lacks transparency, leading to doubts about the adequacy of remuneration for APN performance and, consequently, reluctance toward its acceptance.

As specialist nurses, the APN counterpart in Portugal, have highlighted that fair remuneration, compatible with the responsibility of the tasks to be performed was *conditio sine qua non* for the acceptability of APN performance (Nunes, 2021). Consequently, it can be assumed that adjusting specialist nurses' remuneration to the level of responsibility required by their tasks could enhance the acceptability of APN performance by nurses and facilitate APN implementation.

Although the implementation of APN in Portugal has been advocated primarily within a cost-containment framework, few studies examine the potential impact of expanded nursing practice in the national context. Existing studies are largely based on projections or limited to documenting results from the international practice. Therefore, it is imperative to conduct cost-benefit and cost-effectiveness analyses, similar to those by Barros (2011) and Lopes et al. (2018), to support these arguments.

APN Outcomes

A growing body of evidence, largely derived from systematic reviews and meta-analyses, highlights the positive impact of APN implementation in terms of effectiveness, efficiency, quality, safety, accessibility to healthcare services, patients and professional satisfaction (Bryant-Lukosius et al.,

2004, 2017; Buchan & Calman, 2004; Casey et al., 2017; Delamaire & Lafortune, 2010; Fagerström, 2012; Horrocks et al., 2002; Laurent et al., 2018; Martin-Misener & Bryant-Lukosius, 2020; Newhouse et al., 2011; Woo et al., 2017).

Evidence suggests that advanced practice nurses can improve access to healthcare services and reduce waiting times (Bryant-Lukosius et al., 2017; Delamaire & Lafortune, 2010; Fagerström, 2012), deliver the same or higher quality of care as physicians (Buchan & Calman, 2004; Casey et al., 2017; Delamaire & Lafortune, 2010; Laurent et al., 2018; Newhouse et al., 2011), and enhance both patient and nurse satisfaction (Bryant-Lukosius et al., 2017; Casey et al., 2017; Delamaire & Lafortune, 2010; Fagerström, 2012; Horrocks et al., 2002; Martin-Misener & Bryant-Lukosius, 2020).

Additionally, APN roles have been shown to reduce mortality, admission, and readmission rates (Casey et al., 2017; Newhouse et al., 2011; Woo et al., 2017), while also improving cost-effectiveness (Casey et al., 2017; Delamaire & Lafortune, 2010; Newhouse et al., 2011; Woo et al., 2017).

Despite strong evidence supporting the benefits of APN, there are several contextual and methodological limitations in the existing studies, such as variability in healthcare systems, study designs, and outcome measures (Buchan & Calman, 2004; Delamaire & Lafortune, 2010; Horrocks et al., 2002; Laurant et al., 2018; Sibbald et al., 2004). These limitations prevent the generalization of these findings and limit their applicability across different contexts.

Notwithstanding these limitations, it seems to be consensual that, under certain circumstances, properly trained and qualified APN nurses can provide effective and high-quality assistance (Casey et al., 2017; Delamaire & LaFortune, 2010; Laurant et al., 2018; Newhouse et al., 2011; Woo et al., 2017), promote and improve accessibility to health services (Bryant-Lukosius et al., 2017; Casey et al., 2017; Delamaire & LaFortune, 2010; Fagerström, 2012), reduce waiting times (Newhouse et al., 2011; Woo et al., 2017), and induce efficiency (Casey et al., 2017; Delamaire & LaFortune, 2010; Newhouse et al., 2011; Woo et al., 2017).

Although APN is not implemented in Portugal in the same terms and modalities as in Anglo-Saxon countries, it became evident during the literature review that the attributes and competences of the Portuguese specialist nurses are aligned with the APN performed by the clinical nurse specialist in other countries.

Therefore, it was sought to understand the added value resulting from this advanced practice in Portugal, albeit more limited, and it was found that "... there are no studies that assess the impact of specialist nurses on the Portuguese health system, public or private, and works that seek to estimate their potential impact, even if as a mere conceptual exercise, are scarce ..." (Lopes et al., 2018, p. 20). Lopes et al. (2018) conducted a prospective economic analysis on the impact of specialist nurses' interventions, finding that they could lead to a 5% reduction in patient readmissions that would save up to 93 million euros per year. Despite the existence of specialist nurses in Portugal, the study highlights the inefficiency of the Portuguese healthcare system in fully utilizing their advanced skills.

Although not directly addressing the impact of specialized practice in Portugal, an exercise carried out by Barros (2011) concluded that there is a relevant "substitution margin" between the roles performed by doctors and nurses in Portugal, it being more relevant in Primary Health Care.

Limitations

The international studies and technical documents reviewed provided information on conceptualization, regulation, financing and payment mechanisms, as well as the outcomes achieved by APN in different settings. Meanwhile, the national documents and press articles analyzed highlighted the main barriers and facilitators to APN implementation in Portugal, within the context of healthcare workforce strategic planning and policymaking. However, several methodological limitations should be considered when interpreting the results of this study.

One major limitation was the volume of international documents retrieved from the databases, which required a selective approach to focus the analysis. As a result, some potentially relevant studies may have been excluded, which could affect the comprehensiveness of the findings, particularly if those studies aligned with the objectives of this research.

Also, due to the nature of this review, the methodological quality and validity of the included studies were not assessed, which may have partially influenced the conclusions drawn. Despite the value of a scoping review in mapping the research landscape, it fails to evaluate the methodological robustness of individual studies, thereby limiting the ability to make conclusive recommendations based on high-quality evidence.

Additionally, 34 studies were excluded due to access restrictions (paywalls), which may have introduced bias. The inability to include these studies may have resulted in the omission of potentially relevant findings, affecting the overall comprehensiveness of the results and limiting the generalizability of the conclusions.

Another limitation was the geographic concentration of the included studies, with most originating from Anglo-Saxon countries like the United States, the United Kingdom, Canada, and Australia. This focus may limit the applicability of the findings to the Portuguese context, as variations in healthcare systems and APN regulations between these countries and Portugal could affect the external validity of the results.

Finally, the absence of studies directly addressing the impact of Specialist Nurses in Portugal constitutes a significant limitation. Only one study (Lopes et al., 2018) conducted an economic analysis of the impact of specialist nurses, but there is a lack of empirical data on the formal implementation of APN within the Portuguese National Health Service. This scarcity of evidence limits the ability to generalize the documented benefits of APN in other contexts to Portugal.

Conclusion

The implementation of APN in Portugal seems to be relevant and necessary, as the challenges faced by the Portuguese NHS are consistent with those that have prompted APN implementation in other

countries. Several healthcare stakeholders have also advocated for its introduction. However, its feasibility hinges on reaching a consensus on the conceptualization, regulation and scope of roles, and tasks that APN should perform.

While it is crucial to document and recognize that aspects of APN practice are already partially implemented in Portugal, albeit in a limited and unacknowledged form through the tasks performed by specialist nurses in Portugal, further action is required.

The current legislation, which allows for a more expanded scope of nursing practice, should be enforced and complemented by additional regulations. Financial incentives, including updated remuneration structures, should be implemented as to encourage a broader nursing practice within multidisciplinary teams.

As significant barriers remain, including resistance from the medical profession, a lack of political commitment, and the absence of comprehensive data on the social and financial impact of APN in Portugal, these could be overcome through targeted policies and stakeholder collaboration.

While some evidence exists to support the benefits of APN, further empirical studies on cost-effectiveness, patient outcomes, and healthcare accessibility are necessary to assess its full impact in the Portuguese healthcare context. Additionally, research on the role of specialist nurses as advanced practice nurses and their contribution to the healthcare system should be a priority for future investigations, as it remains sparse.

The findings from this study can guide policymakers, healthcare managers and professional associations, in Portugal and other countries considering APN implementation, providing a framework to facilitate, support and coordinate the successful integration of APN into their healthcare systems.

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