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Co-Designing Nurse Practitioner Roles in a Tertiary Hospital: A Qualitative Exploration of Patterns and Underlying Dynamics

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ABSTRACT

Aims: To explore patterns and dynamics during the co-design process of nurse practitioners' role development in three departments in a Belgian tertiary hospital.

Design: Participatory action research was utilised in conjunction with principles of a Grounded Theory approach to explore patterns and dynamics.

Methods: Sixteen meetings were conducted between January and June 2021 with interdisciplinary teams to develop the roles. Thirteen exploratory interviews were held with the stakeholders involved between March and June 2022. All meetings and interviews were recorded and transcribed verbatim. Data were systematically analysed using researcher triangulation and thematic analysis.

Results: Stakeholders' initial conception of the nurse practitioner roles affected development. A dynamic interplay of individual, team-related and contextual (e.g., financial and legal) factors shaped these conceptions. Through co-design, stakeholders' conception evolved as insights were shared, misconceptions challenged and perspectives broadened. Physicians generally the developmental process, while nursing leadership was more fragmented.

Conclusion: This study identifies patterns and dynamics in interdisciplinary teams during the developmental process. The key findings underpin the crucial role of stakeholders' conceptions, use of co-design and leadership in this process. Therefore, a thorough understanding of initial conceptions is ess, and efforts should be directed towards providing sufficient knowledge and experience to prevent misconceptions. Additionally, this study emphasises the significance of a balanced team composition that incorporates diverse conceptions of the role. Finally, actions should be taken to empower leadership among nurses.

Impact: Identified dynamics offer insights for healthcare organisations developing nurse practitioner roles. Educational institutions can use these insights to enhance healthcare professionals' curricula, preparing healthcare professionals for evolving advanced nursing roles and leadership. Additionally, it emphasises the necessity for policy work to establish a legal framework for nurse practitioners in Belgium.

Reporting Method: The 'Standards for Reporting Qualitative Research' were used for reporting.

Patient or Public Contribution: This study did not involve direct participation from patients or the public.

Summary

- **What Does This Paper Contribute to the Wider Global Clinical Community?**
  - This paper contributes by providing a deeper understanding of the patterns and underlying dynamics involved in the development of nurse practitioner roles.
  - The study demonstrates that Participatory Action Research is an effective methodology to explore and understand the (challenges of) development of nurse practitioner roles.
  - The study encourages developing strategies to address the issue of power imbalances, resulting in more inclusive decision-making and improved interdisciplinary collaboration.

1 | Introduction

New care approaches have internationally gained importance in responding to evolving healthcare demands. The integration of nurse practitioners (NPs) into interdisciplinary teams emerges as a strategy for delivering sustainable high quality care as the prevalence of chronic conditions, multimorbidity and the complexity of care increases (Schober 2018). Multiple systematic reviews show that integrating NPs in interdisciplinary teams has the potential to lower the cost of ambulatory, primary and acute care and to improve access to care without decreasing care quality, safety or clinical outcomes (Newhouse et al. 2011).

A NP is defined as an advanced practice nurse (APN) who combines nursing and medical skills to assess, diagnose and manage patients in primary healthcare settings and acute care populations, and ongoing care for populations with chronic illness (International Council of Nurses 2020). APN is an umbrella term that encompasses various advanced nursing types, including Clinical Nurse Specialist (CNS), nurse anaesthetists and nurse midwives (Wheeler et al. 2022). Each of these has specific scopes of practice and responsibilities. All APN's acquires through a master's degree, expert knowledge, complex decision-making skills and clinical competencies tailored to the specific context in which they are credentialed to practice (International Council of Nurses 2020).

A role refers to a set of responsibilities, tasks, activities and expected behaviours that someone fulfils in a specific context. It outlines the scope of practice, education, regulation and practice climate (Wheeler et al. 2022), aimed at delivering comprehensive and high-quality patient care. The NP-role encompasses various domains in which the NP operates to provide comprehensive care. The core of NP-practice is being a 'clinical expert and practitioner' which involves demonstrating expertise in clinical practice and applying advanced knowledge and skills to provide high quality care (Van Hecke et al. 2024; Verpleegkundigen and Verzorgenden Nederland 2019). In addition, NP's also engage in domains such as 'clinical and professional leader' (embracing leadership responsibilities in healthcare delivery), 'communicator' (effectively exchanging information and collaborating with patients, families and healthcare teams), 'collaborator' (working in partnership with other healthcare professionals to optimise patient outcomes), 'health promoter' (advocating for health promotion and disease prevention), 'researcher' (utilising evidence-based practice and contributing to and initiating research initiatives) and 'organizer of quality care' (coordinating and managing healthcare services to ensure optimal patient care experiences) (Tracy et al. 2019). The difference between a CNS and a NP lies in the emphasis on the specific domains. In contrast to other APN's, such as the CNS who primarily focuses on improving nursing practice and patient outcomes through education and research, the NP's primary focus is providing direct patient care across various settings.

In Belgium, APNs have been growing in number since their introduction in 1999. APNs typically fit the CNS-role or a hybrid of CNS and NP-role. In April 2019, APNs were officially recognised as a healthcare profession under the law of 22 April 2019, which was a significant milestone for the profession. However, despite this legal recognition, challenges remain such as the absence of specific legal frameworks detailing APNs' clinical activities and conditions, as well as issues like prescribing rights.

The development of a NP-role is a complex and dynamic process, requiring a systemic and evidence-based approach that considers the healthcare context (Bryant-Lukosius et al. 2004). To guide this process, the Participatory, Evidence-based, Patient-focused Process for Advanced practice nursing development, implementation, and evaluation (PEPPA) was developed by Bryant-Lukosius et al. (2004). The PEPPA-framework recommends engaging all stakeholders to promote a comprehensive understanding of the roles and ensure optimal use through co-design of the NP-role (Bryant-Lukosius et al. 2004).

Despite the widespread use of the PEPPA-framework (Boyko, Carter, and Bryant-Lukosius 2016), limited knowledge exists regarding the patterns and dynamics that occur when co-designing a NP-role. This study aims to address this gap by describing the observed patterns and underlying dynamics in interdisciplinary teams during the individual co-design process of three NP-roles in a Belgian tertiary hospital. Three different departments (digestive surgery, gastroenterology-hepatology and paediatrics), each with its dedicated interdisciplinary team, independently underwent the developmental process. Each interdisciplinary team collaborated to co-design their NP-role and tailored it to the specific needs of their patients, families and healthcare professional (HCP) teams.

2 | Background

The development of the NP-role dates back to the 1960s. Ford and Silver created the first NP-role in Colorado to improve access to primary paediatric care (Saver 2015). This pioneering effort involved a shared partnership between nursing and medicine, leveraging the strengths and insights of both professions to enhance patient care. As a result, the NP-role emerged as a specialised clinical nursing role that utilised extensive nursing knowledge, operated beyond traditional nursing scopes of practice and embodied the values of holistic, health-focused, patient-centred care (Kilpatrick 2008).

Over time, the NP-role has grown significantly, and evidence-based recommendations for the development of new NP-roles

have been published. In 1978, the Spitzer framework was introduced to facilitate the integration of new HCP roles. Subsequently, Dunn and Nicklin proposed a systematic approach especially for the introduction of APN-roles in 1995 (Bryant-Lukosius et al. 2004). Both frameworks were combined in the nine stepped PEPPA-framework, which advocates for a participatory action research (PAR) approach and emphasises the principle of shared partnership in NP-role development (Bryant-Lukosius et al. 2004).

A democratic and cyclic process of reflection-action that involves stakeholders and researchers is characteristic for PAR. This approach aims to foster a fair distribution of power and strengthens the contributions of all stakeholders (physicians, nurses, management, CNSs, researchers) to achieve a supported and substantiated outcome (Bryant-Lukosius et al. 2004). Co-design and PAR are related concepts. Co-design, much like PAR, involves active collaboration with various stakeholders throughout the stages of problem identification to solution definition (Vargas et al. 2022). The nuance between the two lies in involving researchers in PAR, whereas co-design involves collaboration primarily with end-users.

Utilising co-design for NP-role development offers the advantage of incorporating multiple perspectives to generate context-specific solutions (Vargas et al. 2022). This is particularly valuable in countries like Belgium where the introduction of NPs is still in its infancy with legal, financial and educational challenges to be addressed. However, co-design also presents its own challenges as it requires adherence to principles of equality, openness, respect and empathy to achieve successful collaboration (Vargas et al. 2022).

The application of co-design guided by the PEPPA-framework for NP-role development has been described in 16 countries (Boyko, Carter, and Bryant-Lukosius 2016). However, there is a lack of in-depth studies examining the patterns and dynamics during this developmental process. Therefore, this study aimed to address this gap by investigating the patterns and dynamics that occur during the co-design of NP-roles in three interdisciplinary teams within a Belgian tertiary hospital. Understanding these processes can offer valuable insights for future NP-role developments and help address potential barriers or facilitators, leading to more effective implementation in healthcare settings.

3 | The Study

3.1 | Aim(s) and Objective

The purpose of this study was to explore patterns and dynamics that occur during the co-design process of NP-role development in three departments in a Belgian tertiary hospital.

4 | Methods/Methodology

4.1 | Design

This study is part of a large research project on the development, implementation and evaluation of NPs in a Belgian tertiary hospital (Dehennin et al. 2023). PAR, guided by the PEPPA-framework, has been employed throughout the entire process. In the herein reported exploratory qualitative study, the principles of a Grounded Theory approach were applied. Using the principles of a Grounded Theory approach facilitates the systematic identification of patterns and dynamics and their interrelationships, allowing for a comprehensive understanding of behavioural variations (Glasser and Strauss 1967).

Figure 1 provides an overview of this cyclic data collection and analysis process, from department selection to final analysis.

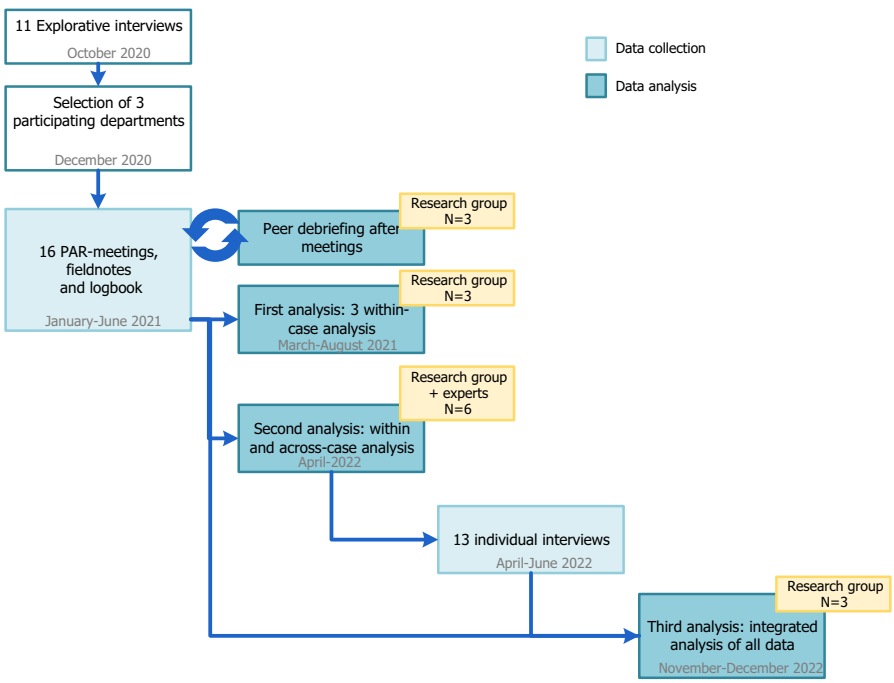

FIGURE 1 | Overview research process of the explorative qualitative study.

4.2 | Study Setting and Recruitment

The need for conducting the overarching project of developing, implementing and evaluating NP-roles (Dehennin et al. 2023), originated from a physician-led request due to a lack of medical staff at their departments and high workloads. Physicians desired to elaborate on strategies to shift some of their standard clinical tasks to another healthcare professional. This prompted the need to explore the feasibility of introducing NPs to alleviate the burden on existing medical staff.

Three different departments were selected to participate. The selection of these departments was based on 11 exploratory duo-interviews in various departments conducted prior to the study. These interviews were conducted with the medical chiefs and the nurse managers in each department to explore which clinical tasks could be shifted from physicians to another type of HCP and to identify the most suitable type of HCP for these tasks. The primary goal of these interviews was to assess the individual needs of the departments and determine the relevance of introducing NPs as the best fit for these needs. The interviews highlighted that the NP-role was particularly suitable due to the nature of the tasks that needed to be shifted and the alignment with the Belgian context. The research group and hospital management established the criteria for participation, which included (1) a pressing need for a new care approach as perceived by the medical chiefs and nurse managers, (2) expressed interest in participating, and (3) inclusion of a variety of disciplines (surgical, acute care, internal and paediatrics). The research group consisted of a staff member (L.D.) from the participating hospital, as well as two researchers (A.V.H., L.-M.K.) from the university with expertise in APN-education, qualitative research and implementation science.

Subsequently, each department was requested to identify key stakeholders who would participate in the PAR-process. The research group ensured equal representation of relevant stakeholders, while also ensuring that no stakeholders were overlooked. This approach resulted in the formation of a team of interdisciplinary stakeholders consisting of the medical chiefs of the departments, physicians, physicians in training, (head) nurses, nurse managers, specialised nurses (e.g., nursing specialised nurses performing nursing consultations, CNS), medical chief officer (depended on availability) and other care providers (e.g., social worker, pharmacist). Together with the research group, they constituted the PAR-team.

During the meetings, the members of the research group played a role as moderator, fostering a conducive environment for thinking and exchanging insights among stakeholders. They facilitated discussions proactively, fostering diverse perspectives and encouraging active involvement of all participants, while also sharing knowledge that enriched the discourse. Furthermore, the research group took on the responsibility of facilitating consensus within and across settings, promoting consistency and coherence.

4.3 | Data Collection

All PAR-meetings were organised and chaired by the first author (L.D.). The PEPPA-framework served as a guiding tool for discussions, without imposing restrictions on content or order. The first author's role during the meetings involved consolidating and refining the participants' input into actionable output based on their feedback. One co-investigator (A.V.H.) actively participated and facilitated the discussions, fostering an iterative cycle of research, action, and reflection. The other co-investigator (L.-M.K.) observed the meetings, took field notes and managed the audio recording. Prior to the first PAR-meeting, written consent was obtained from all participants, following verbal and written information about the study's aim and methodology. A total of 16 PAR-meetings were conducted, varying in frequency depending on the needs and the progress in the developmental process among the three departments: three meetings with the paediatrics team, six with the gastroenterology-hepatology team and seven with the digestive surgery team. All PAR-meetings were audio recorded and took place between January and June 2021, with each meeting lasting 1–1.5 h.

In addition to the formal PAR-meetings, ad hoc contacts occurred between the first author and members of the PAR-teams. These informal contacts were recorded in a logbook and the data were utilised during analysis when it provided explanatory or complementary information to the information obtained during the PAR-meetings.

Finally, at the conclusion of the first and second data analysis (see Figure 1), 13 individual semi-structured interviews were conducted with participants of the PAR-meetings to explore their perceptions and experiences during these meetings. All participants of the PAR-meetings were personally invited by email for these individual interviews, and 13 of them accepted and participated. These semi-structured interviews were conducted by the co-investigator (L.-M.K.) who took a more observing role during the PAR-meetings. The interview guide of these individual interviews had a primary focus on capturing stakeholders' perspectives on their experiences during the co-design process and was inspired by the normalisation process theory (Murray et al. 2010). In addition, individualised questions were included to verify and deepen the observed patterns and dynamics, derived from the observations during and the qualitative analysis of PAR-meetings and first analysis phase. Each individual interview, which lasted 27 min to 1 h 27 min, was audio recorded with the participant's consent. These interviews were carried out between March and June 2022.

4.4 | Data Analysis

The data analysis followed a rigorous and systematic process (see Figure 1), involving several phases to ensure thorough examination and credibility of the findings. The primary data sources for the analysis included verbatim. Transcriptions of the recorded PAR-meetings and individual interviews, field notes taken during the PAR-meetings, and a logbook of informal contacts.

The data analysis was cyclic and iterative, involving continuous comparison of data to identify patterns, dynamics and meaningful insights. The data analysis followed a thematic approach, which is widely recognised in qualitative research for its ability to systematically identify, analyse and report patterns within data (Vaismoradi, Turunen, and Bondas 2013). To

enhance the rigour and credibility of the findings, researcher triangulation was employed at multiple stages. This involved multiple researchers independently analysing the data, followed by discussion to compare and reconcile interpretations to reduce individual bias. The process of researcher triangulation started with short peer debriefing moments with the research group, after each PAR-meeting. These moments allowed for immediate detection and description of meaningful findings.

In the first analysis phase, the data was read and re-read by the research group (L.D., A.V.H., L.-M.K.) to familiarise themselves with the content. Initial coding was performed manually, where themes and patterns were identified through a process of open coding on paper. During this phase, the researchers added notes and memos to capture initial thoughts and reflections. Each department's data was analysed individually after the completion of their respective developmental phase. The aim of this first thematic analysis was to identify patterns and dynamics that shed light on the NP-role developmental process or required further verification. These findings served as the foundation for the individualised questions specified above, allowing for a more targeted exploration of stakeholders' perspectives and experiences during subsequent data collection phases. This allowed for a more targeted and in-depth exploration of specific stakeholders' perspectives and experiences.

Once all departments had completed their developmental process, a second thematic analysis was conducted through another round of researcher triangulation. In this phase, the research group (L.D., A.V.H., L.-M.K.), was joined by three additional researchers (APN-experts and experts in qualitative research) (V.D., E.D., K.G.). These three additional researchers also read the data, and added codes and memos manually on paper. This second thematic analysis encompassed both within-case and across-case analysis. This broader involvement further strengthened the reliability of the analysis by incorporating additional perspectives and reducing potential bias from the research group, who were closely involved in the developmental processes.

After the 13 individual interviews with stakeholders, a third analysis was conducted by the research group. They read again a number of the interviews on which additional memos and notes were added on paper. This integrated analysis of all data (PAR-meetings, field notes, logbook and explorative interviews) allowed for a deeper exploration and understanding of the stakeholders' perspectives and experiences.

This iterative data collection and analysis process enabled constant refinement and revision of the identified patterns and dynamics, enhancing the overall comprehensiveness and richness of the study.

4.5 | Ethical Considerations

Ethical approval for the study was obtained from the Ethics Committee of Ghent University Hospital for both the PAR-meetings and the individual interviews conducted in each department (EC-09339). Prior to the commencement of the project and the individual interviews, all participants were informed about the study's purpose and the nature of their involvement. Written information was provided to the participants to ensure their understanding and informed consent.

Data were securely stored in a designated location accessible only to the researchers. The data management plan, approved through DMPonline.be, outlined the procedures for data handling, storage and protection. All data used for analysis and reporting purposes were anonymised.

4.6 | Rigour and Reflexivity

Different strategies were employed to ensure the quality and rigour in data generation and data analysis. To enhance transferability, peer debriefing sessions were conducted after each PAR-meeting to discuss and reflect on the emerging findings. This process allowed for collective sensemaking and increased the trustworthiness of the study (Nowell et al. 2017).

Comprehensive field notes were taken during and after the PAR-meetings and individual interviews, capturing not only factual information but also the researchers' feelings, biases and insights. This reflexive approach promoted confirmability by acknowledging and addressing the potential influence of the researchers' subjectivity on the interpretation of the data (Morrow 2005).

Furthermore, multiple meetings were organised with the PAR-teams throughout the study, enabling ongoing engagement and dialogue. These longitudinal interactions ensured that the findings were not solely influenced by specific moments or circumstances (Maxwell 2012).

To enhance transferability and generalisability, consistent data collection methods were employed across all three departments, which were selected to ensure a variety of medical specialties. This approach enhanced the likelihood that the results could be transferable to other similar healthcare settings (Patton 2014).

The reliability of the results was strengthened through data and researcher triangulation to provide a comprehensive understanding of the phenomenon under investigation (Denzin and Lincoln 2011). The exploratory interviews were employed as a member check for the results from the second round of analysis, aiming to enhance the robustness of findings through validation by participants. Additionally, an iterative process of analysis was conducted, allowing for cross-validation and refinement of the emerging findings (Lewis 2015).

5 | Findings

5.1 | Characteristics of Participants

Twenty stakeholders participated in the PAR-meetings and 13 of these participants were recruited for the exploratory interviews. The characteristics of the participants are outlined in Table 1.

Two key themes emerged that collectively influenced the development of the NP-roles: the evolving conception of the role and leadership among PAR-team members. Leadership of stakeholders served as an engine in the co-design process, leading to the

TABLE 1 | Characteristics of the participants.

Characteristics of the participants in the PAR-teams				
	Setting A (*N* = 11)	**Setting B (*N* = 6)**	**Setting C (*N* = 6)**	**Total (*N* = 20)**
Gender, *N* (%)				
Male	6	3	2	9
Female	5	3	4	11
Work experience (in years), *N* (%)				
0–4	1	—	—	1
5–9	1	—	—	1
10–15	1	1	—	2
20–25	3	1	—	4
> 25	5	4	6	12
Professional role, *N* (%)				
Chief medical officer	1	1	1	1[a]
Medical chief of department	1	—	1	2
Medical head	2	1	1	4
Physician (incl. physician in training)	2	1	—	3
Nurse manager	1	1	1	21
Head nurse	2	2	1	5
Nurse experts (CNS/specialised nurse)	1	—	1	2
Social worker	1	—	—	1
Characteristics of the participants of the individual interviews				
	Setting A (*N* = 6)	Setting B (*N* = 4)	Setting C (*N* = 4)	Total (*N* = 13)
Gender, *N* (%)				
Male	3	2	1	6
Female	3	2	3	7
Work experience (in years), *N* (%)				
10–15	—	1	—	1
20–25	3	—	—	3
> 25	3	3	4	9
Professional role, *N* (%)				
Medical chief of department	1	—	1	2
Medical head	2	1	1	4
Physician (incl. physician in training)	—	1	—	1
Nurse manager	1	1	1	2
Head nurse	2	1	1	4

[a]Same participant across different settings.

evolution of the initial stakeholders' conception of the roles (see Figure 2).

The following sections describe the patterns and dynamics in detail.

5.2 | The Evolving Conception of the Roles

The NP-roles development was influenced by stakeholders' initial conception of the roles. The conception of the role refers to one's understanding of the responsibilities, duties

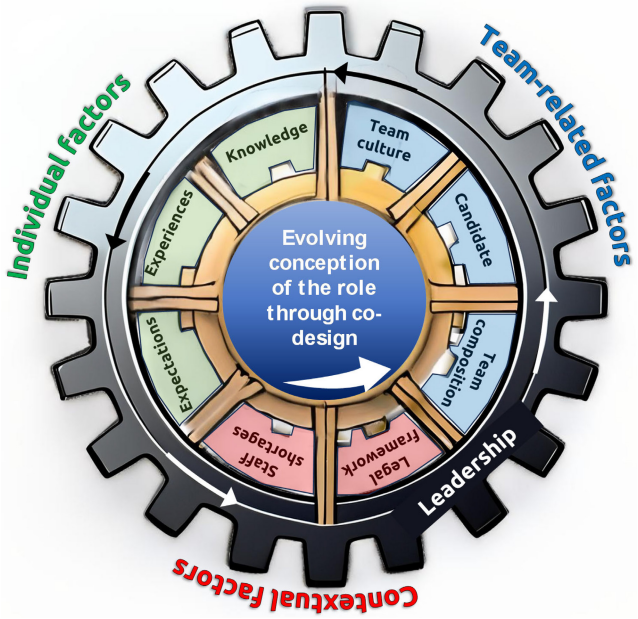

FIGURE 2 | Interrelationship between key teams influencing development of the NP-function.

and expectations associated with the NP. Each stakeholders' conception was shaped by individual, team-related and contextual factors. Stakeholders' conception of the roles was dynamic during the co-design process as it evolved through exchange and sharing of information and deliberation during PAR-meetings.

5.2.1 | Individual Factors

Stakeholders started the process with diverse conceptions of the roles, shaped by a complex interplay of their prior knowledge, experiences and expectations.

Initially, stakeholders demonstrated limited prior knowledge of the NP-role and other nursing expert roles (such as specialist nurses, specialised nurses performing nursing consultations, CNSs), which influenced their initial conception. The individual interviews revealed that mainly nursing department stakeholders had existing knowledge. However, this knowledge was not always shared during the co-design process.

Stakeholders who had previously collaborated with NPs in other countries or were familiar with other nursing expert roles, also influenced the conception of the roles. Sharing these previous experiences within the PAR-team resulted in an evolution of initial conception of stakeholders, especially those without previous experiences as they could envision little of what the roles might entail.

> In (...) there seem to be nurses in abdominal surgery who are nurse specialists, and they accompany the resident. However, they seem to focus on tasks like finalising discharge letters and preparing prescriptions. I hope that here (...), we can expect more autonomy. Not just executing what the resident asks for, but rather having a good collaboration where the NP can make more independent decisions.
>
> —Clinical Nurse Specialist

It was a recurring pattern that physicians with prior experience with nursing expert roles were more willing to allocate greater responsibilities and autonomy to NPs compared to physicians with little experience.

Furthermore, there was a pattern that stakeholders' conception of the roles was influenced by their professional backgrounds. Physicians primarily kept the scope of practice of physicians in training in mind while defining characteristics and responsibilities for NPs, while the nursing department predominantly drew from their experiences with various nursing (expert) roles. Subsequently, physicians emphasised clinical diagnosis, treatment planning and aspects traditionally associated with medical roles, and the nursing department emphasised aspects such as holistic patient care, health promotion and disease prevention.

Each stakeholder brought their own expectations to the developmental process. Additionally, these expectations were driven by stakeholders' individual needs (e.g., addressing physicians' workloads) and by their respective roles within the overall process (e.g., head of department as facilitator of the process).

> That NP was in its infancy. I found it difficult to get a grasp on it. So I then looked a bit into the literature to see how... But you don't find much about it. And it was mainly like "What role are they going to take on?" Well, the doctors did have a good idea of what they wanted it to mean for them, but for us, it was still... I found it quite difficult.
>
> —Head nursing department

Initially, most stakeholders approached the NP-roles with a rather limited perspective due to their lack of knowledge, experience, specific expectations and pre-existing needs. This resulted in a narrow focus emphasising the clinical domain of the NP-role as this domain would fulfil those needs the most. Additionally, limited knowledge of the NP-roles' full scope, a role covering all domains, meant that stakeholders did not initially considered domains beyond the clinical one. Domains such as research and education, were not spontaneously considered but were explored when introduced by other stakeholders or researchers.

> I also think more broadly, for example, if we notice that the nursing staff is facing certain challenges or if certain things are not clear to them, then the NP is the right person to address those issues. The NP can work together with the head nurse to organise a training on a specific topic and also collaborate with other experts to provide additional support and assistance to the nursing staff.
>
> —Clinical Nurse Specialist

It was a recurring pattern that tensions arose when expectations regarding the NP-roles were unclear, misaligned, or perceived as unmet. For instance, physicians were requested to contribute to the research-part of the NP-implementation project such as recruiting patients or completing questionnaires. As a result, tensions arose as they expected that the implementation of the NP-roles would lead to a reduced workload. Additionally, stakeholders experienced shifts in expectations due to new knowledge introduced through co-design, challenging their initial expectations (e.g., stakeholders expected that the NP could autonomously subscribe ambulant medication but it still had to be validated by the physician). Some stakeholders also feared that the evolving conception of the roles might jeopardise their established roles, leading to tension within the interdisciplinary team (e.g., physicians in training worried about their role and teaching opportunities).

> Then, suddenly, that clinical nurse specialist feels that there's someone on the floor who does fulfill tasks of a physician, and that gives such an uneasy feeling.
>
> —Head medical department

5.2.2 | Team-Related Factors

Stakeholders' conception of the roles was further shaped by three team-related factors: the existing team culture, envisioning an ideal candidate for the NP-role, and the composition of the PAR-team.

First, diverse team cultures across the three departments influenced the process. These cultures ranged from a rather paternalistic cultures, where decision-making authority was concentrated among physicians, to more collaborative cultures that acknowledged the expertise of all team members. In more collaborative team cultures, stakeholders emphasised a patient-centred perspective for the NP-role and facilitated equal contributions from physicians, nurses and other healthcare providers. This enriched the conception of the roles. Conversely, in more paternalistic cultures, the co-design process was dominated by physicians, leading to a NP-role predominantly aligned with physicians' needs and conceptions, with less consideration for perspectives of other professions, such as nursing.

Second, the vision of an ideal candidate for the NP-role also influenced stakeholders' conception of the roles, and vice versa. Criteria for an ideal candidate varied depending on whether stakeholders considered all domains or focused primarily on the clinical domain. In two settings where physicians emphasised the clinical domain, a recurring pattern emerged: physicians prioritised trust and clinical competencies often relying on past collaborative experiences with potential candidates. This led to less emphasis on formal qualifications, such as a master's degree.

> That there was indeed a lot of emphasis from certain quarters that the person must obtain a master's degree in nursing, and so on, and that there was much emphasis on the theoretical framework and theoretical education. While we had more of a mindset like, let's just have someone with the right mindset, who is hands-on enough, who can work autonomously, who is motivated to take on this role, and that was our main condition for success rather than any specific diplomas or ambitions to obtain diplomas.
>
> —Physician

During the exploratory interviews, physicians expressed that a lack of knowledge about the APN curriculum, hindered their ability to accurately evaluate the value of a master's degree. They noted that in practice, there was little observable distinction between nurses with a master's degree and those with a professional bachelor's degree, as both performed similar tasks on the ward.

Stakeholders from the nursing department, along with a physician from one of the settings, emphasised ambition and educational degree as key requirements for an ideal candidate. They highly valued a master's degree and the associated competencies, viewing it as crucial for fulfilling all domains within the NP-role.

> Yes, of course, it is a master's and it is a nurse! I do think that master's nurses should be able to provide clearly different contributions than professional bachelors. Currently, when they work on the ward, there is not enough distinction, and you can't really understand why you would do a master's if you get the same tasks and the same pay, that is still the case, and it hasn't changed much yet [...] There might be some lost talent among all those master's nurses to do something more meaningful.
>
> —Medical head department

In two settings, physicians proactively searched for a potential candidates from their allied nursing teams, while in one setting, the nursing department led the search. Once a potential candidate was identified, stakeholders' conception of the role evolved as they assessed the candidate's qualities against role requirements such as expected competencies, educational degree and prior work experience.

A third team-related factor was the composition of the PAR-team. When other nursing expert roles were part of the PAR-team, such as specialised nurses performing nursing consultations, CNSs, they ensured the inclusion of all domains in the NP-role. Additionally, they also facilitated clear differentiation between the NP-role and other nursing expert roles. Their experiences with autonomy, both emphasising the careful exercise of autonomous actions and advocating for sufficient autonomy for NPs to operate efficiently, positively influenced stakeholders' conception of the roles regarding the allocation of sufficient autonomy.

5.2.3 | Contextual Factors

Finally, stakeholders' conception of the roles was influenced by contextual factors. It was a recurrent pattern that stakeholders

primarily focussed on short-term contextual factors rather than long-term opportunities.

The shortage of physicians (in training) and nurses was a first contextual factor. In two out of three settings, the scarcity of physicians and the reduction in physicians (in training), were the initial and primary drivers for introducing a NP. Consequently, tasks and responsibilities traditionally associated with physicians (in training) were assigned to the NP.

> There are several items that are very interesting, such as communication, rounding, and so on. Those are things that apply to the starting physician in training and would also apply to the NP.
>
> —Physician

This physician-centric approach resulted in NP-roles with a more biomedical focus and a less holistic focus. However, the physician-centric approach also emphasised granting sufficient autonomy to NPs, enabling them to work more independently compared to other nursing roles. Nevertheless, this approach raised concerns, particularly from the nursing department, regarding the lack of a legal framework for these tasks and the potential impact on both nurses and patients, who might no longer interact with physicians. In the third setting, where the scarcity of physicians was less urgent, stakeholders had more space for a broader perspective, emphasising the expansion of the nursing role rather than solely focusing on physician substitution.

The shortage of nursing staff also impacted the conception of the NP-roles, as stakeholders, particularly from the nursing department, sought to strike a balance between ensuring an adequate number of bedside nurses and creating an appealing NP-roles to retain nurses.

Another contextual factor was the absence of a legal framework for NPs in Belgium. The lack of a legal framework primarily constrained nurse managers to conceptualise the roles. Physicians also considered this deficiency as a limitation in the NP-roles conception, but they were more willing to grant autonomy beyond what the legal framework allowed. Physicians granted autonomy based on interprofessional agreements, protocols, standard procedures and/or treatment plans elaborated by the physician. However, they wished to retain final responsibility for medical decisions.

5.2.4 | The Value of Co-Design

The co-design process fostered an exchange of ideas regarding the conception of the roles, prompting stakeholders to expand their initial perspectives, facilitating the identification of opportunities and solutions while preventing misconceptions. This exchange took place within PAR-teams and extended across different teams, involving researchers and a single stakeholder who participated in two settings. Progressive insights emerged, particularly concerning the characteristics of NPs, differentiation from other nursing expert roles, required training and education, and the practical implementation of the roles. Through this process, misconceptions were addressed, leading to a reduction in tensions among stakeholders. For example, concerns about the perceived threat to stakeholders' roles diminished as they gained a clearer understanding of the NPs complementary to existing nursing expert roles and physicians in training.

In the explorative interviews, most stakeholders acknowledged the positive influence of the co-design process, emphasising its collaborative nature, the exchange of insights, and the collective learning that occurred. However, some stakeholders also pointed out the sensitivities and tension inherent in a co-design process involving various stakeholders with distinct conceptions of the roles.

> I think it's an enrichment; in the sense that there are people from the nursing education, nursing or ... who then, looked at it from those aspects. We mainly looked at it from the clinic and towards the patient. And then, it was certainly necessary that the most important group—nursing—was also well represented. ... For the right reason, to tackle because, experience with the introduction of certain, functions such as nurse specialists; oncology, etc. Yes, that is [.] an advantage but it also has its sensitivities that need to be addressed.
>
> —Physician

5.3 | Who Is Taking the Lead?

The dynamics of leadership, followship and mediation within the co-design process influenced the development of the NP-roles. Stakeholders who acted as leader played a crucial role in shaping the NP-roles as their conception prevailed.

5.3.1 | Physicians in the Lead

A recurring pattern entailed that physicians took the lead in shaping the NP-roles. Different leadership styles were observed across the interdisciplinary teams, ranging from more directive, to supportive and participative. The leadership style influenced the degree of input from other stakeholders. In all cases, physicians played a primary and ultimate role in deciding the scope of practice, tasks, responsibilities, education and training for the NP. Consequently, the pace of the process was mainly determined by physicians' clarity about the roles and the level of consensus among physicians.

This physician-centric leadership dynamic seemed not pose a concern for any stakeholder during the exploratory interviews. However, one physician noted that if someone from the nursing department had taken the lead, it might have introduced more challenges and slowed down the process because their conception of the roles might have been different.

Several factors contributed to physician's taking the lead. First, this project was initiated at the request of physicians to reduce

their workload. In the individual interviews, both physicians and other stakeholders referred to the project as 'the project of the chief medical officer', establishing ownership with the physicians.

> It's a bit regrettable that the initiative actually came from the group of physicians to support the physicians. And, well, that might still play against us that nobody in this hospital ever took the initiative, like the nursing management or from the care perspective, to launch the pilot project from there.
>
> —Care manager

Second, during the co-design process and explorative interviews, physicians stated that they were still responsible for the care they entrusted to the NP. This led them to take a more prominent role in the developmental process as they decided which risk they were willing to take. Stakeholders from the nursing department also acknowledged that physicians, with their knowledge and expertise, were best-suited to decide which tasks could be safely entrusted to the NP. Third, the lack of leadership from the nursing department allowed the leadership of physicians to dominate. Lastly, financial aspects enhanced the sense of ownership among physicians. The NPs were co-financed between the hospital management and the departments. The financial resources allocated by the hospital management came from a broader nursing budget, which was granted on the initiative of the chief physician to this project. The departments' funding came from the medical budgets, managed by the heads of the medical departments. Obtaining these financial resources for the NP strengthened the sense of ownership among physicians.

5.3.2 | Nursing in Pursuit

Leadership within the nursing department varied across different departments but was generally limited and fragmented. A complex interplay of various dynamics, such as the lack of ownership, power imbalances, lack of initial conception of the roles, being given the space to take on leadership and daring to take on leadership, formed the basis of this.

In the individual interviews, some stakeholders from the nursing department expressed that they did not felt ownership in the project because they had the feeling they were involved later in the process. Despite the decision of starting the project was being made in the presence of both the medical head and nursing managers of the departments, the medical department had already defined the scope, without consulting the nursing department, before the first official meeting. As a result, the nursing department immediately felt less involved in the process. Additionally, the project was initiated at the request of the physicians, with the aim of reducing their workload, which led nurses to perceive no ownership for the nursing department.

The presence of the chief medical officer was described by stakeholders as facilitating the speed and efficiency of the process, but also hindering the co-designing due to the imbalance in power. One stakeholder of the nursing department, stated to have had uncertainties, especially in the initial phase of the process, regarding the extent to which they could freely express their own perceptions in the presence of the chief medical officer.

Stakeholders of the nursing department seemed to have less vision on the conception of the NP-roles compared to the physicians. Nursing managers stated that the idea or request to integrate a NP did not came from them, and they initially did not see the need for the nursing department, resulting in a more challenging roles conception.

> It's not that they imposed it on me. Not that, but I wasn't asking to start with it either.
>
> —Head nursing department

Some nursing managers mentioned that they had not found the time to deeply engage in the project and one nursing manager even indicated a deliberate 'wait and see' attitude to observe the outcomes. The lack of a clear vision from the nursing perspective resulted in the underrepresentation of the nursing aspect of the NP. Additionally, the needs of the nurses (e.g., educational needs by other nurses on the ward related to the domain area of specialisation) were not integrated or addressed adequately in the conception of the NP-roles.

Active engagement, explicit acknowledgment and recognition by physicians of the valuable contributions and expertise from the nursing department resulted in a more proactive role taken by the nursing department during meetings. It was a pattern that physicians primarily actively engaged the nursing department when practical matters (e.g., work schedules, anticipated implementation barriers, mentorship of the NP, selection procedures) were discussed that fell outside their own knowledge and experiences.

Finally, there was a dynamic of collective leadership approach. The leadership of the members of the nursing department more often emerged when one nursing stakeholder dared to take the first initiative to voice their opinions or ideas. Other stakeholders then felt empowered to take on leadership as well.

5.3.3 | Mediator in the Process

Within each team, one stakeholder spontaneously seemed to take up the role of mediator. In two of the settings, the mediator was a physician, while in the remaining setting, a head nurse took on this role. These stakeholders exhibited characteristics such as an empathic attitude and the ability to provide a meta-perspective that transcended individual perspectives. The mediator played a crucial role in facilitating the progress of the developmental process, particularly when tensions arose among different stakeholders, attempting to foster connections between all parties involved by finding common ground.

> Um, I have taken on a role as, how should I say it, a facilitator in that process. So, my role as medical

> chair of the department allows me to push or pull these kinds of projects from a role that is facilitating for different departments. Without having too much, yes, how should I say it, a subjective feeling that it is only for one department. My role is always to ensure that if a new project can be started, that it is for the greater good and not just for the benefit of a small group.
>
> —Head of medical department

6 | Discussion

The aim of this study was to explore the patterns and dynamics that occur during the co-design process of NP-role development in three departments in a Belgian tertiary hospital. Various factors influencing this developmental process were identified. These factors were multifaceted, encompassing the initial conception of the roles influenced by individual, team-related and contextual factors, the evolvement of this conception through co-design, and the leadership of stakeholders in the process.

The conception of the NP-roles played a prominent role in the developmental process. Stakeholders brought their own knowledge, experiences and expectations, all influenced by their professional backgrounds, the dynamics within the healthcare team, and contextual factors. Drawing from the framing theory (Tversky and Kahneman 1989), these findings align with the notion that individuals tend to interpret information based on pre-existing frames. In the context of this study, stakeholders approached the conception of the NP-roles with diverse cognitive frames. This diversity likely contributed to the absence of a shared understanding at the onset of the developmental process. Recognising this influence of cognitive frames and intrinsic motivation on stakeholders' conceptions and decision-making highlights the importance of unravelling and aligning cognitive frames early in the developmental process to establish a more cohesive and collaborative foundation and fostering a shared understanding.

The utilisation of co-design significantly enriched the development of the NP-roles. The positive influences of co-design in this study align with the three levers of interaction in the 'collective making' framework (Langley, Wolstenholme, and Cooke 2018). This framework highlights the transformative power of participatory design in shaping collaborative knowledge creation within health care through a series of interactions at three levels. First, co-design influences stakeholders as co-creators, creating conditions for knowledge mobilisation, which was also a transformative aspect in this study. The iterative process of idea sharing, challenging and refinement inherent in co-design facilitated the alignment of cognitive frames among stakeholders. This alignment collectively shaped a shared understanding, serving as a solid foundation for subsequent decision-making in the developmental process of the NP-roles. Second, according to the collective making framework, co-design has a direct impact on the knowledge itself, enabling stakeholders to learn practical implications. In this study, this learning process played a pivotal role in the refinement and enhancement of the NP-roles. The exchange of knowledge and experiences among stakeholders contributed to the evolution of the shared understanding, ensuring its alignment with newfound insights and progressive perspectives. The deeper understanding gained through co-design addressed the initial challenges posed by limited knowledge on APN-roles and paved the way for more innovative opportunities within the NP-roles' development. Lastly, co-design influences implementation, reflecting the positive impact on stakeholders and knowledge. The shared understanding, established through participatory design, played a crucial role in facilitating the implementation of decisions that resonated with the cognitive frames of all stakeholders involved. According to the Medical Research Council-framework, this enhances the likelihood of identifying interventions and increases the potential for practice changes (Skivington et al. 2021). The benefits of co-design observed in this study align with international experiences in APN-roles' development. For instance, (Feistritzer and Jones 2014) and (McNamara et al. 2009) found that collaborative approaches, guided by the PEPPA-framework, facilitated the definition and clarification of the NP-roles among stakeholders. Similarly, (Jokiniemi et al. 2021) reported that co-design processes in Finland led to a more context-appropriate APN-roles.

While this study highlights the positive impact of co-design on the development of the NP-roles, it is crucial to also acknowledge the challenges during this collaborative process. However, these challenges should not deter healthcare organisations from adopting collaborative approaches but rather highlight the importance of careful planning the co-design process. One prominent challenge is addressing the power imbalance within the developmental process. This study revealed that physicians predominantly took on leadership roles in the developmental process, while nurses played a role from a more pragmatic stance. This finding is also consistent with prior research highlighting the hierarchical nature of healthcare organisations and nurse-physicians relationships (D'amour et al. 2008; Jackson et al. 2013). The critical role of leadership in NP-role development and implementation is well-documented internationally. Effective leadership was crucial for successful NP-role integration across various healthcare settings in Canada (DiCenso and Bryant-Lukosius 2010). Additionally, Carter et al. (2010) highlighted the importance of nursing leadership in advocating for and shaping NP-roles. However, this finding of power dynamic also echoes discussions in Lewis's work examining the power relationship between medicine and nursing within the context of developing APN-functions (Lewis 2022). In this paper, modern sociological theories are used to provide an enhanced insight into the development in terms of power, control, professional identity and gender relations. Several connections can be drawn to Lewis's sociological theories. First, the identified power imbalances in leadership roles, particularly with physicians taking the lead, resonate with Lewis's notion of power and social control in medical authority. The initiation of the NP-roles development project at the behest of physicians solidified their ownership, influencing the trajectory of the co-design process. This dominance, while efficient, raises questions about inclusivity and whether a more collaborative initiation between the medical and the nursing department could have yielded a more comprehensive and diverse NP-roles. Second, the occupational

power (influence and authority that individuals hold within a specific profession or occupation) wielded by physicians, coupled with the acknowledgment of knowledge as power, played a role in shaping the evolving conception of the NP-roles. The influence of physicians' experiences, both positive and negative, with NP-roles in other countries showcased how individual conceptions of the roles contributed to decision-making. The challenge lies in balancing this wealth of experience and knowledge with the diverse perspectives of other stakeholders. Third, the co-design process revealed a recurring pattern where physicians predominantly decided the scope of practice, tasks and responsibilities for the NP. This aligns with Lewis's assertion that the process of establishing workplace jurisdiction determines the legitimate right to undertake a particular type of work. The implications of this centralised decision-making needs careful consideration, especially in fostering a more egalitarian and inclusive NP-role. However, the focus on physician substitution is not unique to this study in Belgium. International literature shows NP-roles were initially conceived primarily as a solution to physician shortages, especially at early stages of NP integration (Maier and Aiken 2016). However, more mature NP models, such as those in the United States and Canada, have evolved beyond mere substitution (Bryant-Lukosius et al. 2016). These countries have a long tradition of NP practice, dating back to the 1960s, resulting in well-established and integrated roles. These mature NP models are characterised by an expand scope of practice, advanced education and regulatory recognition. These mature models emphasise the unique contributions of NPs, including their focus on health promotion, disease prevention and holistic patient care, alongside their clinical expertise (Bryant-Lukosius et al. 2016). Fourth, the identification of occupational imperialism in task allocation, with physicians assigning tasks to NPs that they deemed less vital, echoes Lewis's exploration of how dominant professions may relegate tasks to others. The co-design process needs to be mindful of these dynamics to ensure an equitable distribution of tasks and responsibilities. Fifth, the engrained professional identity, particularly the idea that physicians should lead in clinical care, as revealed in the study, aligns with Lewis's exploration of how professional identity influences power dynamics. The challenge here is not only to acknowledge these ingrained beliefs but also to work towards a more collaborative approach that values the expertise of each stakeholder group.

The importance of addressing these challenges to a co-design process can be traced back to the framework of 'collective making' (Langley, Wolstenholme, and Cooke 2018), that suggests that optimal conditions related to hierarchical levels, empowerment and giving voice are needed to achieve the influence on knowledge exchange. Finally, it is also noted that the perceived hierarchical differences among stakeholders can hinder shared decision-making and the effectiveness of interprofessional collaboration (D'amour et al. 2008).

6.1 | Strengths and Limitations of the Study

The strengths of this study lie in the rigorous and cyclic process of data-collection and analysis. Data triangulation enhanced the validity of the findings and facilitated an in-depth exploration of the research questions. This integrated approach encompassing both descriptive and explanatory aspects of the developmental process, allowed for a comprehensive understanding and the complexities involved. In addition, the study's longitudinal design made it possible to capture dynamics and patterns over time, providing more reliable conclusions.

The iterative process of data analysis including different phases of analysis and researcher triangulation enhanced rigour and reliability of the findings. In addition, researcher bias was reduced by involving three experienced researchers in the process of researcher triangulation for the second analysis. These researchers were not involved in the PAR-meetings, but they are experts in the field of nursing expertise, qualitative research and nursing leadership. However, despite the methodological precautions, the possibility of researcher bias arising due to the close involvement of the research group in the co-design process cannot be entirely ruled out. The reflective attitude of the researchers further minimised this risk. This was especially important for the researcher who was also staff member in this hospital, as this could introduce biases based on prior experiences and contacts.

Another strength is the inclusion of multiple departments in this study, which enhances the generalisability of the findings. However, as it was conducted in a tertiary hospital, caution should be exercised in generalising the results to other contexts. In addition, the sample of departments was selected in part on interest and vision regarding the NP-role, what potentially introduced selection bias.

6.2 | Recommendations for Further Research

Two recommendations can be made for future research. First, to enhance the validity and generalisability of the findings, a more diverse and larger sample of hospitals, including non-academic hospitals, should be considered. Second, it is advisable to study effective strategies for overcoming the challenges during and facilitating the co-design process. This research could investigate how to reduce the impact of existing power imbalances, how to promote nursing leadership in co-design or how to influence individuals conception of the role to create optimal conditions for co-design.

6.3 | Implications for Policy and Practice

The implications of this research are multifaceted and offer valuable insights for the effective development of NP-roles. The study underlines the critical importance of assembling co-design teams thoughtfully. It suggests that team members should be selected not only based on their expertise but also for their ability to collaboratively engage in the process. The careful selection of team members ensures a more cohesive and effective co-design process (Castro et al. 2018; Trischler, Kristensson, and Scott 2018).

To identify potential blind spots and ensure a comprehensive understanding of stakeholder perspectives, it is advisable to map conception of NP-roles, intrinsic motivation and expectations before initiating the co-design process. This mapping exercise can help in recognising differing viewpoints and expectations

among stakeholders and facilitate more inclusive and informed decision-making. Additionally, education of other healthcare professionals about the role of the NP and their contribution to the multidisciplinary team, including their impact on patients, teams and organisational levels, is crucial given their added value.

Furthermore, if teams are identified with limited experience in expert roles, such as NPs, cross-cultural learning should be considered. Drawing insights from (foreign) healthcare systems and NP practices can broaden their knowledge base, stimulate creativity and inspire innovative solutions.

This study also emphasises the need to establish optimal conditions for effective co-design as described in the framework of 'collective making' (Langley, Wolstenholme, and Cooke 2018). Therefore, strategies to create an environment that fosters open communication, active collaboration and shared decision-making among stakeholders should be integrated when planning the co-design process. This includes providing the necessary resources (e.g., relevant literature to facilitate informed discussions), support (e.g., training sessions on effective collaboration), and structures (e.g., clear timelines) for successful co-design processes. Particular attention should be paid to strategies to mitigate power imbalances. Including clear guidelines for decision-making, mechanisms for involving all voices (e.g., regular check-ins with all stakeholders), and methods for resolving conflicts (e.g., third-party mediation) in a fair and equitable manner are possible actions that should be considered (Ni She and Harrison 2021; Singh et al. 2023).

In conclusion, developing a strong governance framework for APNs in Belgium, with clear guidelines at both institutional and national levels, is recommended to define APN-roles, foster interprofessional collaboration, ensure full autonomy and ensure sustainable integration, thereby improving patient care and outcomes.

7 | Conclusion

This study uncovered patterns and dynamics in the co-design process of NP-role development across three departments. The key findings highlight the importance of stakeholders' conception of the role, the positive impact of co-design, and the challenges it presents. The evolving conception of the role was a central factor. This unique perspective, influenced by individual, team-related and contextual factors, shaped the direction of the role conception. Co-design fostered a deeper understanding of the NP-roles and stakeholders' conception of the role, and aligning NP-role development with the needs and expectations of healthcare practice. In addition, the study also revealed challenges associated with co-design. Addressing power imbalances among stakeholders emerged as a critical issue, emphasising the need for hierarchical balance and empowerment. Future research is recommended to identify effective strategies to effectively address these challenges. The implications underscore the importance of thoughtfully assembling co-design teams, mapping stakeholders' cognitive frames and intrinsic motivation, and promoting knowledge transfer by creating optimal conditions for co-design.

Author Contributions

Made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data: L.D., E.D., V.D., L.-M.K., A.V.H. Involved in drafting the manuscript or revising it critically for important intellectual content: L.D., F.V., E.D., V.D., L.-M.K., A.V.H. Given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content: L.D., F.V., E.D., V.D., L.-M.K., A.V.H. Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved: L.D., F.V., E.D., V.D., L.-M.K., A.V.H.

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Ethics Statement

Ethics Committee of Ghent University Hospital (EC-09339).

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

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

Peer Review

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Supporting Information

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