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Being and Becoming a Mentor

Personal and Professional Growth in a Swedish-Norwegian Multicenter Nurse Mentorship Intervention

Stina Kallerhult Hermansson

UMEÅ UNIVERSITY

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Till Selma och Ada

Hon som vägleder någon annan på deras väg går inte ensam, utan skapar ett band av tillit och kunskap, en väv av gemensam visdom.
-Okänd-

Contents

Abstract

Background: Mentoring in nursing is recognized as a strategy to improve the retention and workplace well-being of registered nurses. However, while nurse mentors play a crucial role in the mentoring process, their experiences and development are underexplored in research. Global concerns regarding registered nurses' retention and deteriorating working environments, highlighted by organizations such as the World Health Organization, underscore the need for sustainable strategies that foster supportive work cultures. Within the Swedish-Norwegian action research project *Becoming a Professional Nurse (BePROF)*, a mentorship intervention was developed and tested in the northern regions of both countries. This thesis, which exists within the BePROF framework, explores mentoring from the perspectives of nurse mentors.

Aim: The aim of this thesis was to explore mentoring within the nursing profession by examining registered nurses' job satisfaction, professional competence, and self-efficacy at different work experience levels, and by exploring nurse mentors' experiences, development, and the prerequisites for mentoring in the context of a mentoring intervention.

Methods: This thesis applied quantitative, qualitative, and mixed methods to explore complementary approaches to knowledge creation. The studies contributed to the overarching action research project's phases *problem identification* and *evaluation*. Study I was a multicenter cross-sectional survey of 1137 registered nurses, comparing self-rated job satisfaction, professional competence, and self-efficacy across work experience groups. Data were analyzed with descriptive and comparative statistics. Study II was a qualitative interview study with 21 registered nurses describing their experiences of being a mentor, analyzed with qualitative content analysis. Study III used a mixed-methods design to explore nurse mentors' clinical teaching behavior, self-efficacy, and role development. Data were collected from 52 participants before the intervention, 30 at post-test I, and 17 at post-test II, along with focus group interviews involving 19 nurse mentors post-intervention. Quantitative data were analyzed with descriptive and comparative statistics, and qualitative data with qualitative content analysis; results were triangulated to identify convergence and divergence. Study IV was a qualitative study based on focus group interviews with 19 nurse

mentors, exploring their perspectives on the prerequisites for mentoring, analyzed with qualitative content analysis.

Results: Nurse mentors demonstrated strong motivation and ability to take on mentoring roles. However, the results from both the pre- and post-intervention phases underscored a clear need for enhanced organizational support for nurse mentors. Results in Study I showed that job satisfaction was lowest among registered nurses with medium-term work experience, compared to newly qualified nurses and registered nurses with long-term work experience. Professional competence and self-efficacy were highest among registered nurses with long-term work experience. In Study II, the results further showed that being a nurse mentor meant fostering safety within complex working environments. Study III showed that during the intervention, the nurse mentors experienced both personal and professional growth, particularly in terms of relationship-building, mentoring skills, and role clarity. Consistently high ratings were reported regarding clinical teaching behavior and self-efficacy, with a post-intervention increase in clinical teaching behavior scores. The results in Study IV further emphasized that nurse mentors require organizational structure and the support of leaders in order to facilitate the mentoring process.

Conclusions: Being and becoming a nurse mentor is a relational, reflective, and developmental process that fosters nurse mentors' professional identities, and contributes to a positive workplace culture. When it is embedded into daily clinical practice, nurse mentors can support the transition of newly qualified nurses into the profession, thereby enhance retention, and promote lifelong learning. It can strengthen leadership, communication, and reflection skills, while also reinforce a sense of purpose and belonging in nurse mentors. For mentoring to be both sustainable and impactful, it must be supported by unit leaders through structured routines and continuous guidance. Future studies should explore the long-term sustainability and impact of mentoring in nursing longitudinally. Key areas for future research include how mentoring influences professional development over time; the role of organizational culture and leadership in successful mentoring implementation; assessing the economic impact of such implementations; and the potential of interprofessional mentoring to support collaborative practice across disciplines.

Keywords: Intervention, job satisfaction, nurse mentors, organizational culture, professional competence, professional role, registered nurses, self-efficacy, workplace.

Abbreviations

CTB	Clinical teaching behavior
ICN	International Council of Nurses
JS	Job satisfaction
NPC	Nurse professional competence
NQN	Newly qualified nurse
RN	Registered nurse
SE	Self-efficacy
WHO	World Health Organization

Original papers

I. Kallerhult Hermansson, S., Norström, F., Hilli, Y., Rennemo Vaag, J., & Bölenius, K. (2024). Job satisfaction, professional competence, and self-efficacy: a multicenter cross-sectional study among registered nurses in Sweden and Norway. *BMC Health Services Research*, *24*(1), 734–11. https://doi.org/10.1186/s12913-024-11177-8

II. Kallerhult Hermansson, S., Kasén, A., Hilli, Y., Norström, F., Vaag, J. R., & Bölenius, K. (2024). Exploring registered nurses' perspectives as mentors for newly qualified nurses: a qualitative interview study. *BMJ Open*, *14*(5), e082940-. https://doi.org/10.1136/bmjopen-2023-082940

III. Kallerhult Hermansson, S., Hilli, Y., Norström, F., Solbakken, R., & Bölenius, K. Advancing nurse mentors' development through a mentoring intervention: A mixed methods study (manuscript submitted)

IV. Kallerhult Hermansson, S., Hilli, Y., Solbakken, R., Norström, F., & Bölenius, K. (2025). The Need for Organisational Structure and Leadership Support: A Qualitative Study on Nurse Mentors' Perspectives on the Prerequisites for Effective Mentoring. *Journal of Advanced Nursing*. https://doi.org/10.1111/jan.16948

Preface

Throughout my career as both a registered nurse (RN) and a teacher, I have been passionate about advocating for improved working conditions and rights for workers. As my experience grew, I increasingly felt undervalued and taken for granted. I watched junior colleagues, who were new to the profession, become more stressed and pressured, with many leaving nursing early in their careers. At the same time, experienced RNs were also exiting, leaving units scrambling to adapt and resulting in a less stable working environment. In my view, this trend began in the early twenty-first century and has only worsened since.

Yet, nursing is still the greatest job in the world. It is disheartening that we are often unable to practice it to our fullest potential.

As a teacher at the nursing program at Umeå University, I became increasingly concerned about my students' futures. Will the hospitals and other healthcare units support their growth, or will they face the same pressures that cause so many to leave? How can we nurture and retain them, ensuring they become competent, confident RNs who provide safe care to patients and their families? How can we equip them to support the next generation of RNs?

In our healthcare system, change takes time. So, what can we do in the meantime? How can we, as RNs, support each other to thrive and endure throughout our careers? In my opinion, the answer is clear: we need a working environment that fosters support and mentoring within a culture of continuous learning.

As I delved into the literature on mentoring in nursing, I was surprised by how little foregrounds the perspective of nurse mentors and experienced RNs. Once again, our voices felt under-acknowledged and underexplored. With this thesis, I aim to shed light on the perspectives of nurse mentors, highlighting their unique views and needs. As one of the participants, an experienced nurse mentor, put it: "What we are saying may be obvious, but no one has ever asked us before."

Stina Kallerhult Hermansson

Umeå 2025

Sammanfattning på svenska

Denna avhandling utforskar mentorskap relaterat till sjuksköterskans profession genom att först undersöka sjuksköterskors arbetstillfredsställelse, professionella kompetens och självtillit vid olika arbetserfarenhetsnivåer, samt genom att utforska mentorers erfarenheter, utveckling och förutsättningar för mentorskap inom ramen för en intervention. Studierna ingår i det svensk-norska aktionsforskningsprojektet *Becoming a Professional Nurse (BePROF)*, där en mentorskapsintervention för nyutexaminerade sjuksköterskor utvecklades och testades i norra Sverige och norra Norge. Projektet initierades som ett svar på den ökande problematiken med sjuksköterskors avhopp från yrket, ofta kopplat till bristande arbetsmiljö och försämrat välmående.

Avhandlingen bygger på fyra delstudier med kvantitativa, kvalitativa och mixade metoder. Studie I var en enkätstudie med 1137 sjuksköterskor för att undersöka deras arbetstillfredsställelse, professionella kompetens, och självtillit, jämfört mellan olika erfarenhetsgrupper. Data analyserades med beskrivande och jämförande statistik. Studie II innefattade individuella intervjuer med 21 erfarna sjuksköterskor om deras tidigare erfarenheter av att vara mentor, analyserat med kvalitativ innehållsanalys. Studie III innefattade fokusgruppsintervjuer med 19 mentorer efter interventionen, kombinerat med enkäter före (med 52 deltagare) och två gånger efter interventionen (med 30 respektive 17 deltagare), för att utforska deras kliniska undervisningsstrategier, självtillit, och utveckling i rollen som mentor. Kvalitativa data analyserades med kvalitativ innehållsanalys och kvantitativa data med beskrivande och jämförande statistik. Resultaten triangulerades för att identifiera överensstämmelser och skillnader mellan de kvalitativa och kvantitativa fynden. Studie IV innefattade också fokusgruppsintervjuer med 19 mentorer efter interventionen, för att undersöka de organisatoriska förutsättningarna för mentorskap, analyserat med kvalitativ innehållsanalys.

Huvudresultat både före och efter interventionen visar att mentorer är motiverade och kompetenta att ta sig an rollen, men att rollen kräver organisatoriskt stöd i form av tid, struktur och ledarskap. Resultat från Studie I visar att sjuksköterskor som arbetat mellan 1.6–5 år var den grupp som hade lägst arbetstillfredsställelse, jämfört med både helt nya och mer erfarna kollegor. Sjuksköterskor som arbetat över 6 år var den

grupp som hade högst självskattad kompetens och självtillit. Studie II visade att sjuksköterskor såg sin mentorroll som ett sätt att skapa trygghet i komplexa arbetsmiljöer. Resultat från Studie III visade att under interventionen stärktes mentorerna i sina kliniska undervisningsstrategier. De upplevde även utveckling i sin relation till adepter, kollegialitet och professionella identitet. Mentorskapet främjade reflektion, förbättrad kommunikation och meningsfullhet i att stödja både sig själva och nyutexaminerade sjuksköterskor. Studie IV visade vidare att mentorerna behövde stöd och kontinuitet från ledare och att mentorskapet integreras i den ordinarie yrkesrollen, snarare än att ses som en extra uppgift.

Slutsatser från avhandlingen är: att vara och bli mentor är en strategisk, relationell och utvecklande process som stärker professionell identitet, ledarskap och lärandekultur. För att lyckas krävs ett organisatoriskt ramverk med tidstilldelning, strukturerade träffar, stöd från ledare och formellt erkännande. Att ha mentorskap som ett etablerat arbetssätt signalerar ett engagemang för hållbar kompetensförsörjning, relationellt ledarskap och kontinuerligt lärande. Fortsatt samverkan mellan sjuksköterskeutbildning och hälso- och sjukvårdsorganisationer är avgörande för att underlätta övergången till yrket och främja reflekterande praxis. Centrala områden för framtida forskning innefattar hur mentorskap påverkar professionell utveckling för sjuksköterskor på längre sikt, bedömning av de ekonomiska effekterna av sådana insatser samt potentialen hos interprofessionellt mentorskap för att främja samverkan mellan olika professioner.

Introduction

The working environment for registered nurses (RNs) has become increasingly complex, affecting their well-being, retention in healthcare organizations, and the quality of patient care (Hassmiller & Wakefield, 2022). In spite of rising demand, various factors influence whether RNs choose to remain in their profession (International Council of Nurses, 2021a). Individual factors, such as job satisfaction (JS) and self-efficacy (SE), as well as organizational conditions, such as a manageable workload, opportunities for recovery, and supportive workplace cultures, play pivotal roles in influencing whether RNs choose to remain in their profession (Al Zamel et al., 2020; De Simone et al., 2018). Mentoring is a process wherein an experienced RN supports and guides a newly qualified nurse (NQN) to foster their professional and personal development. The current need for mentorship in healthcare is greater than ever, as it plays a crucial role in enhancing healthcare delivery, shaping policy, and improving outcomes by fostering well-prepared and highly skilled RNs (Melnyk, 2023).

Although mentoring and introduction routines for NQNs are widely promoted across healthcare organizations in Sweden and Norway, their actual implementation and long-term sustainability often differ in practice. Mentoring interventions in nursing have been previously developed and evaluated (Mínguez Moreno et al., 2023; Zhang et al., 2016), but there is a lack of research exploring the experiences and perspectives of nurse mentors. This constitutes an important gap in understanding how mentoring can be sustainable over time.

To address the need for sustainable mentoring in nursing, a structured mentoring intervention was developed within a collaborative action research project between universities and healthcare organizations in Northern Sweden and Northern Norway: *Becoming a Professional Nurse (BePROF)*. This thesis explores mentoring from the perspectives of nurse mentors in the context of the larger BePROF project.

Background

This chapter presents the background of the thesis by providing an overview of current knowledge and evidence related to mentoring in nursing. It begins with sections on the perceived nursing shortage, factors affecting RN retention and well-being, and the challenges associated with the transition into professional practice—key issues that underscore the importance of mentoring. Following this, the concept of mentoring is explored, in particular the role of the nurse mentor and the need for improved mentorship structures. This leads into a presentation of the overarching BePROF project, which this thesis is a central component of.

The perceived nursing shortage

Over the past two decades, societal and political discussions in many countries worldwide have increasingly focused on the issue of a growing RN shortage. Numbers and statistics vary due to the classification of "nurse" which can include other professionals than RNs, such as midwives and assistant nurses. The World Health Organization (WHO)'s *State of the World's Nursing Report 2025* estimates a global shortfall of 4.1 million nurses by 2030 (World Health Organization, 2025). Earlier, a 2022 report from the International Council of Nurse Migration by Buchan et al. (2022) projected a global need for approximately 7 million nurses by 2030.

At the time of writing, Sweden and Norway are both experiencing significant RN shortages. However, staffing figures in both countries have fluctuated due to the impact of the COVID-19 pandemic. In the Swedish Labor Market Barometer 2020, with projections of supply and demand until 2035, the shortage was estimated at nearly 3000 RNs and 3000 specialist RNs (including midwives) (Statistics Sweden, 2020). Recent statistics from 2024, based on job openings and recruitment needs, showed a shortfall of 2400 RNs and 900 specialist RNs (Statistics Sweden, 2025). Norway reports a shortfall of 2100 RNs and 950 specialist RNs—one of the largest shortage of any profession in the country (Arbeids- og velferdsdirektoratet, 2025). A 2024 report by the Swedish National Board of Health and Welfare found that a majority of the responding municipalities and regions reported shortages of RNs. The report also highlighted that 53% of licensed healthcare personnel are concentrated in large, urban counties (Socialstyrelsen, 2024). The situation in Norway is similar, with recruitment challenges particularly

pronounced in municipal care services; here, RNs are the most difficult group to recruit, especially in rural counties (Helsedirektoratet, 2021).

According to the Swedish Association of Local Authorities and Regions (2025), the overall shortage has begun to ease slightly. Between 2023 and 2024, the number of employed RNs increased by 4.2% in municipalities and 3.2% in regions, and RNs' turnover rates decreased. However, the authors of said report caution that sustaining this positive trend will require continued investment in improving the working environment. Similarly, despite efforts to increase staffing in Norway, many municipalities continue to struggle with high turnover and retaining qualified personnel, especially in areas with limited access to training and professional development (Helsedirektoratet, 2024).

Thus, the concept of an RN shortage is open for debate. Research and statistics suggest that the real issue may not be the supply of trained professionals, but the absence of sustainable, supportive working environments that can effectively employ and retain RNs (Pressley & Garside, 2023). The WHO (2020) has stressed the need to improve healthcare systems in order to retain RNs, rather than focusing solely on increasing the number of graduates. A similar concern was echoed during the UK's National Health Service (NHS) strikes in 2022, during which the slogan "Retain – not recruit!" underscored the urgency of addressing retention challenges over recruitment efforts (Mahase, 2022).

Each year, approximately 4000–4500 RNs graduate in Sweden and Norway, respectively (Helsedirektoratet, 2024; Universitetskanslersämbetet, 2024). A report from The Swedish National Health Competence Council (2024) concluded that more than 13,000 qualified RNs in Sweden are not working in their profession, which has an estimated societal cost of 5.5 billion SEK. The report further argued that the main reason for RNs leaving the profession is poor working conditions, rather than education or training, and that the focus must be on improving the working environment in order to retain existing staff. Regions and municipalities struggle to plan and allocate healthcare resources, to an extent because of insufficient processes and unclear assessments of staffing needs. This leads to unrealistic workloads for healthcare staff, who often have to make difficult prioritizations without adequate support. The Swedish National Health Competence Council (2024) proposed actions to improve staffing and retain competence, including more time and resources for skills development, better career opportunities, and structural support.

Health-promoting factors for a sustainable working life

Supporting RNs in maintaining long-term engagement in their profession and a healthy working life are crucial issues that have wide-reaching effects on society (Hassmiller & Wakefield, 2022). A Swedish study on working conditions during and after COVID-19 by Nagel and Nilsson (2025) showed a longitudinal association between the work situations and mental health of RNs. The study concluded that support from colleagues and development opportunities at work are important for the mental health of RNs.

The Swedish initiative *Suntarbetsliv*, developed through a collaboration between trade unions and employer organizations, highlights essential factors that contribute to a healthy and sustainable working environment. The first of these is having supportive leaders who set clear goals and empower their staff; this plays a vital role in the well-being and performance of RNs. The second factor is continuous development of competence through ongoing opportunities for learning and skill-building, which helps RNs to stay engaged and confident throughout their careers. Timely responses to and adaptation regarding signs of stress and ill health, along with tailored support, are critical in preventing long-term absence and promoting recovery. Together, these factors are key to retaining RNs, supporting their health, and ultimately ensuring high-quality patient care (Suntarbetsliv, 2021).

The *Magnet Recognition Program*, developed by the American Nurses Credentialing Center (ANCC), identifies healthcare organizations that exemplify nursing excellence, innovation, and better patient outcomes. The program focuses on fourteen characteristics that foster positive and empowering working environments for nurses. These include high-quality leadership, an organizational structure that promotes decentralized and flat hierarchies with strong nursing representation, and a participatory, transparent management style that encourages communication, JS, and nurse retention. The Magnet framework emphasizes the role of the nurse as a teacher, and supports professional development through continuous education, orientation programs, and career ladders, all of which nurture lifelong learning and leadership potential. Hospitals recognized by the Magnet program are more attractive and have healthier working environments, and as a result have better nurse retention than other hospitals (Tomey, 2009). Magnet hospitals were developed in the US, and studies are conducted to

research European implementation. Svensson et al. (2024) found that the local context played a significant role in a European implementation, and that hospitals adopted diverse strategies to either highlight or diminish the role of nurses and nursing. In the Nordic countries, one hospital has received Magnet recognition from the ANCC: The HUS Cancer Center in Finland.

Factors influencing RN retention and well-being

RN retention and turnover are complex issues, and influenced by multiple factors. Hörberg et al. (2023) found that experienced RNs (11–15 years of experience) stated an intention to leave the profession due to difficulties relating to organizational conditions, job demands, relationships, recognition, and health. Lyu et al. (2024) showed that the intention of NQNs to leave is shaped by demographics, job challenges, workplace support (including mentoring), working environment, gender norms, motivation, role models, and resilience. Factors that contribute to the retention and overall well-being of RNs include high JS, high self-rated professional competence, and strong SE (Al Zamel et al., 2020; De Simone et al., 2018; Kalandyk et al., 2016). While these factors are largely associated with individual RNs, organizational and environmental conditions play a crucial role in influencing them (Kalandyk et al., 2016).

Job satisfaction (JS) was originally defined by Locke (1969) as the enjoyable emotional state that arises when an individual's work aligns with their professional values and standards. JS is a multifaceted concept, and is influenced by factors such as education, motivation, commitment, support, collaboration, and leadership (Liu et al., 2016). Previous studies have shown conflicting results regarding JS, with a study from Pakistan showing that higher age leads to higher JS and performance (Abdullah et al., 2021), and an Iranian study showing that lower age is associated with higher JS (Atefi et al., 2015). A concept analysis has shown that RNs with lower JS have more frequent thoughts of leaving the profession and increased absence from work (Liu et al., 2016). A systematic review by Niskala et al. (2020) showed that mentoring programs, workshops, educational sessions, and evidence-based nursing management practices positively affect the JS of RNs. Doleman et al. (2025) concluded that implementation of supportive initiatives could increase JS and help retain RNs in the profession.

Professional competence is a complex concept with no universal definition. According to Mulder (2014), professionals are viewed as competent when their actions are responsible and effective according to the commonly held standards of their profession. *Nurse professional competence (NPC)* can be described relative to different domains of the practice of RNs, for example value-based nursing care, medical technical care, and documentation and administration of nursing care (Nilsson et al., 2014). NPC encompasses both knowledge and skills, is developed and refined over an RN's career, and serves as the foundation for their ability to meet the demands of nursing practice (Fukada, 2018). According to Benner's (1984) theory, the skills that experienced nurses have developed over the course of their careers facilitate the long-term and ongoing career development needed to manage the nursing complexity and responsibility of nursing practice. Supporting the NPC of RNs is vital for their retention, as well as for the provision of safe patient care. In a large and globally recognized European study, Aiken et al. (2014) found that the competence and education levels of RNs was linked with patient safety and mortality. Evidence suggests that mentoring can promote professional competence and professional development for RNs (Chen & Lou, 2014).

Self-efficacy (SE) is a concept that was initially defined by Bandura (1977) as an individual's belief in their ability to carry out the actions needed to be able to accomplish desired results. Bandura later defined SE as a person's belief in their ability to perform with what they have under various circumstances, i.e., the self-perception of being able to successfully perform a task (Bandura, 1997). A more recent study on SE in RNs conceptualized SE as confidence to handle change (Vardaman et al., 2020). RNs with a higher sense of SE have more resilience to stress and burnout and improved work performance and clinical skills, and higher SE has been found to be associated with reduction in burnout and turnover intention among RNs (Chami-Malaeb, 2022; Vardaman et al., 2020). RNs who are satisfied with their professional development opportunities also demonstrate high SE (Kalandyk et al., 2016). Research has shown that mentoring promotes higher SE in mentees (E. Choi & Yu, 2022), but SE in nurse mentors is underexplored.

Transitioning into the nursing profession

Being an NQN, and thus new to the profession, means being in a vulnerable position, with a heavy burden of responsibilities and the need to navigate professional expectations and balance personal and

professional lives (Tast et al., 2024). This is often experienced as "transition shock", wherein the realities of being a professional RN are shocking for the NQN (Duchscher, 2009). An NQN has been defined as a nurse with less than two years of work experience (Aldosari et al., 2021; Harrison et al., 2020; Mammen et al., 2018; Spence Laschinger et al., 2019). However, in this thesis an NQN is defined as an RN with up to 18 months of work experience. The transitional nature of becoming an NQN means that the first 18 months of an RN's employment are characterized by heightened stress, risk of burnout, and thoughts of leaving the profession (Aldosari et al., 2021). Baharum et al. (2023) emphasized that the successful adaptation of an NQN to their professional role as an RN is influenced by a combination of organizational factors (e.g., workplace culture and job characteristics), individual personality traits (e.g., proactiveness and confidence), and academic preparation (e.g., pre-entry knowledge). They concluded that the transition into professional practice should begin during nursing education, and be reinforced by organizational support such as mentoring from a nurse mentor.

Mentoring

Mentoring and interpersonal support play a critical role in retaining RNs in the profession (Buchan et al., 2022). A study by the American Nurses Association found that mentoring is one of the most frequently requested forms of support by NQNs entering the workforce (Hewlett et al., 2020). Mentoring is associated with the success of RNs in practice, particularly in terms of their professionalism, quality improvement in their practice, and self-confidence (Meier, 2013). Beyond helping NQNs, mentoring has also been shown to support the overall professional development of RNs (Mijares & Radovich, 2020; Pham et al., 2019; Schroyer et al., 2020). Rollins Gantz and Hafsteinsdóttir (2023) collected narratives of mentoring in nursing, and concluded:

> *Mentoring has been identified as one of the significant and effective measures to strengthen the retention, satisfaction, and career longevity of nurses in the global nursing workforce and creating a healthy work environment.* (p. xxx)

Mentoring as a concept

Defining mentoring is complex, as there is a lack of consensus and consistency in how the concept is understood. In a concept analysis, Meier (2013) tried to clarify an "overused and vague concept", and defined it as:

> *A nurturing process in which a more skilled or more experienced person, serving as a role model, teaches, sponsors, encourages, counsels, and befriends a less-skilled or less-experienced person for the purpose of promoting the latter's professional and/or personal development*. (p. 343)

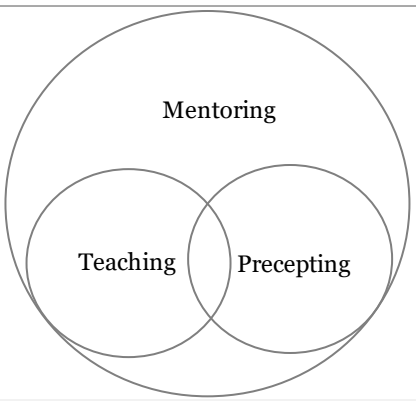
This definition could be extended to other relationships, such as precepting, coaching, and teaching (Campbell, 2009). The concepts of mentoring and precepting are often used interchangeably, making it difficult to draw clear conclusions from the literature regarding what constitutes effective mentoring. The terms “mentor”, “supervisor”, and “preceptor” are frequently used without precise definitions, creating ambiguity (Zhang et al., 2016). This has contributed to a knowledge gap in the literature, hindering a comprehensive understanding of the mentoring process (Hale, 2018).

One key distinction is that precepting is typically conducted over the course of a set timeframe, and focuses on specific learning objectives and workplace routines under supervision during an initial introduction period or clinical placement (Ward & McComb, 2018). Research suggests that introductory programs in nursing should not simply cover workplace routines, but provide guidance to support the transition into the profession (Brook et al., 2019; Hampton et al., 2021). Here it is essential to incorporate support for the non-clinical aspects of nursing, such as social and communication skills and stress management (Hampton et al., 2021).

Thus, mentoring goes far beyond a standard introduction. It cultivates a closer interpersonal connection than precepting, providing not only guidance on daily work challenges but essential psychosocial support. In nursing, mentoring is a complex and multifaceted process that involves a wide range of activities and characteristics. Research by Hale (2018), Lin et al. (2018), McBride et al. (2017), and Mullen and Klimaitis (2021) has described mentoring in the context of nursing as a relationship-centered process that encompasses multiple supportive roles, both professional and psychosocial. It involves teaching, encouragement, constructive challenges, counseling, affirmation, advice, protection, and meaningful feedback. Moreover, mentoring often involves developmental phases and does not have a clearly defined endpoint, reflecting its ongoing nature and adaptability. The relationship, i.e., the mentorship, requires at least two individuals: the nurse mentor—an experienced RN who provides guidance and support (Hale, 2018)—and the mentee—the NQN receiving that support. Disch (2018) argued that mentorship is not a one-way

process but rather a reciprocal relationship, with potential developmental benefits to both the mentor and the mentee.

Mentoring, precepting, and teaching are all relationships between one person who is more experienced and one person who is less experienced in the specific context. Moreover, all of these relationships have the aim of supporting development and learning, and each can incorporate elements from the others. However, these relationships can also be distinct from one another. An attempt to visualize the distinctions is shown in Figure 1, which gives an example for each.



	Teaching	Precepting	Mentoring
Definition	Structured process for facilitating learning of a specific topic or skill (Campbell, 2009)	Learning through practical experience under supervision (Ward & McComb, 2018)	Encompasses elements of both teaching and precepting, but also extends beyond them by offering broader support and guidance from a role model (Meier, 2013)
Role	Teacher	Preceptor	Nurse mentor
Focus	Knowledge transfer and skill acquisition	Supervised practice in real clinical settings	Professional development and support
Example	You attend a lecture on urinary catheterization, learning about anatomy, indications, contraindications, and techniques. Then, you practice the procedure on a mannequin in the skills lab under the guidance of a teacher.	During your clinical placement, you insert a urinary catheter on a patient for the first time. Your preceptor is present, guiding you through the steps, ensuring safety, and giving feedback.	As an NQN, you perform the procedure independently. The patient becomes distressed. Afterwards you speak with your nurse mentor, and reflect on what went well and what did not, discussing e.g. how to prepare and support patients, and how to manage feelings such as guilt and stress that might arise following an unsuccessful procedure.

Figure 1. Overview of concepts: teaching, precepting, and mentoring.

Mentoring in other contexts

Mentoring is not unique to nursing; it is a well-established practice in many areas, including education, police training, the corporate and private sectors, and sports (Ives et al., 2024; Meier, 2013). Historically, mentoring has played a crucial role in supporting underprivileged and marginalized people, helping them to establish themselves in fields where they are underrepresented. Past mentorship programs have, for example, provided guidance for women in male-dominated industries and supported underprivileged youth in pursuing academic careers (Albright et al., 2017; Ilumoka et al., 2017).

Mentoring can take various forms, such as group mentoring and peer-to-peer mentoring, each offering distinct benefits. Research consistently demonstrates the advantages of effective mentoring, including improvements in career satisfaction, productivity, work-life balance, continuous professional development, and ability to achieve successful outcomes (Disch, 2018). In the business sector, mentoring tends to be focused on achieving specific set goals, such as salary increases, career advancement, and increasing professional contacts (Hryshchenko et al., 2025).

McBride et al. (2017) highlighted a shift in perspective from the twentieth to the twenty-first century, wherein mentoring is no longer seen as a mere act of kindness or privilege but as a professional responsibility, and a skill that can be intentionally developed. Mentoring is no longer just a means of assisting a select few in need; instead, it is seen as being a valuable tool that benefits everyone, and an integral part of professional life.

The nurse mentor

Most studies on the perspectives of nurse mentors have been conducted in the context of the precepting of nursing students; examples include systematic reviews by Pramila-Savukoski et al. (2020) and Tuomikoski et al. (2020). Dikmen and Şenyuva (2024) found that nurse mentors often describe their relationships with NQNs as similar to a teacher-student dynamic, involving learning and guidance. Kakyo et al. (2022) found that mentoring in a hospital setting can support the leadership development of nurse mentors and enhance their professional satisfaction.

Several studies have specifically investigated mentoring of NQNs from the perspective of the mentee. This has shown that effective nurse

mentors do not need a qualification in teaching or mentoring, but should have relevant experience, a strong interest in mentoring, and good communication skills (Zhang et al., 2016). It also suggests that NQNs benefit most from nurse mentors who are experienced, communicative, and receptive, and who create a safe and supportive learning environment. Good nurse mentors foster a sense of belonging, provide guidance, actively listen, and encourage professional development, ultimately empowering their mentees (Chen & Lou, 2014; Mullen & Klimaitis, 2021). Additionally, nurse mentors bring valuable insights and a broad perspective, helping mentees to reframe challenges and recognize opportunities as they navigate their early careers (Disch, 2018). According to previous research, a nurse mentor should have a minimum of 18 months experience, and ideally two to three years of experience (Benner, 1984; Duchscher, 2008).

Additionally, research has found that an essential quality of a nurse mentor is well-developed *clinical teaching behavior (CTB)*, which extends to both verbal and non-verbal interactions. Good CTB fosters learning and professional development in clinical settings (Lee-Hsieh et al., 2016), and has six factors or domains: *Committing to teaching*, *Building a learning atmosphere*, *Using appropriate teaching strategies*, *Guiding inter-professional communication*, *Providing feedback and evaluation*, and *Showing concern and support*. Several studies have developed instruments to assess preceptors and their CTB with nursing students. However, mentoring of NQNs and how this can be evaluated had not been fully investigated until Lee-Hsieh et al. (2016) adapted an existing tool for assessing clinical teaching of nursing students to the NQN context. CTB involves a nurse mentor or preceptor being a role model and supporting learning in clinical settings, supports the learning processes of the individual, and enhances their professional competence (Jokelainen et al., 2011). Additionally, it helps to create a caring, trusting relationship within a supportive learning environment, fostering ongoing professional development (Hilli et al., 2014). Notably, research addressing the specific experiences of nurse mentors is scarce, particularly their role in supporting NQNs in the workplace.

The need for improved mentorship programs

There is no standardized structure for organizing an introduction to the profession for NQNs internationally, and there are inconsistencies in terms of format, intensity, and level of formality of mentoring (Vidal & Olley, 2021). The frequency of mentoring sessions is typically determined collaboratively by the nurse mentor and mentee, with the

duration of the relationship ranging from three months to over a year. Mentor-to-mentee ratios vary widely, from one-on-one arrangements to group settings with up to five mentees per nurse mentor (Hoover et al., 2020).

Statistics and research on introduction routines in Sweden and Norway are scarce, but reports from the Swedish National Board of Health and Welfare (Darin-Mattsson et al., 2023) and the Norwegian Nurses Association (Husebø et al., 2021) shows that in virtually all regions and municipalities of both Sweden and Norway, some form of introduction is provided for NQNs as they enter the profession. These may be referred to as "introduction programs", "clinical foundation years", "introductory years", or "mentorship programs", among other terms. The role of the nurse mentor, supervisor, or introduction RN also varies, as do the number of people involved, how the role is structured and organized, the amount of time allocated, and other organizational factors. While mentoring and introduction for NQNs are advertised by every healthcare organization in Sweden and Norway, the reality of how these are conducted and their sustainability can vary (Darin-Mattsson et al., 2023; Husebø et al., 2021).

While mentoring interventions in nursing have previously been developed and tested, they are rarely implemented as long-term solutions (Edwards et al., 2015). High workloads, organizational challenges, and high staff turnover contribute to the short-lived nature of many mentoring initiatives (Coventry et al., 2015; Edwards et al., 2015; Jangland et al., 2021). A scoping review by Mínguez Moreno et al. (2023) concluded that all studied mentoring programs contributed to improvements for RNs, patients, and organizations, but that such programs require more in-depth and comprehensive research in order to be more sustainable.

Becoming a Professional Nurse (BePROF)

A Swedish and Norwegian collaborative action research project, *Becoming a Professional Nurse (BePROF),* was initiated in 2020, with the goal of developing an evidence-based mentorship intervention with digital features that can support NQNs in their transition to being professional RNs, and educate and support nurse mentors in their roles. BePROF represents an innovative approach because of its interdisciplinary development, empirical testing, and grounding in the expressed needs of NQNs and knowledge of experienced RNs and

healthcare leaders. An overview of the BePROF project is shown in Figure 2, with the studies that constitute this thesis in bold text.

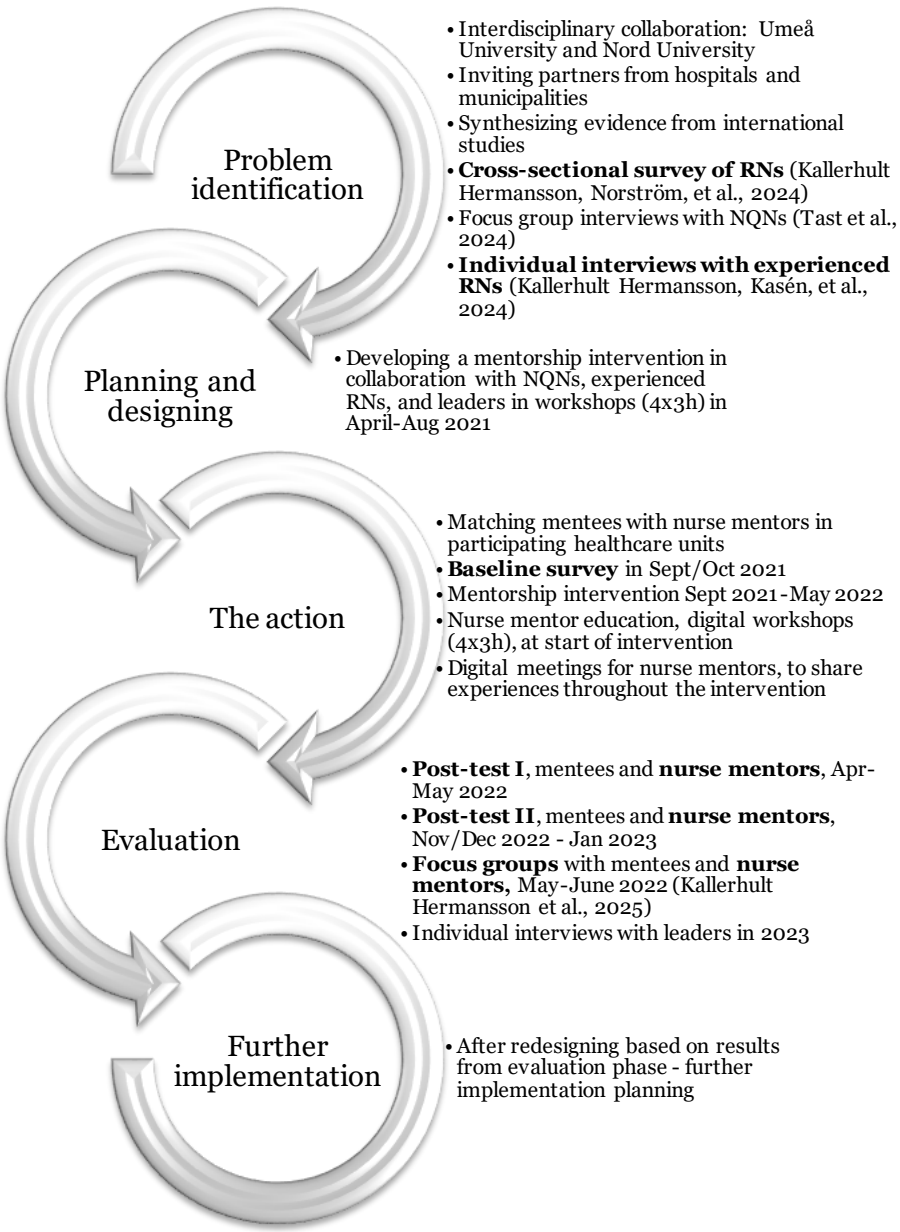


Figure 2. Overview of the BePROF action research project.

Co-creation

The development of the intervention was informed by focus group interviews with NQNs (Tast et al., 2024), individual interviews with experienced RNs (Kallerhult Hermansson, Kasén, et al., 2024), previous evidence, relevant literature, and theoretical frameworks such as transition theory (Dall'Alba, 2013; Duchscher, 2008, 2009). The intervention was developed over the course of four workshops involving RNs, unit leaders, and IT experts from hospitals and municipalities in Northern Norway and Northern Sweden. The development process was guided by the Double Diamond model (Design Council, 2015), which has four phases: Discover, Define, Develop, and Deliver.

In the first workshop, the participants explored the concept of mentoring and discussed preliminary research findings. The focus was on understanding stakeholder needs and building a shared foundation. The second workshop focused on prioritizing needs and formulating a clear problem statement to guide the intervention. The participants collaboratively identified goals and essential components of the mentorship intervention, such as digital forums for experience exchange. The final two workshops focused on filtering, prioritizing, and refining the selected ideas. Attention was given to organizational sustainability and practical implementation. The mentorship intervention was then finalized and prepared for testing. Key elements of the intervention were mentor-mentee matching, mentor education and a digital platform, mentoring sessions held by mentors and their mentee(s) and workshops to exchange experiences throughout the intervention.

The intervention ran between September 2021 and May 2022 in the counties of Västerbotten (Sweden) and Nordland (Norway). Regular meetings with a mentor-leader project group supported the process (*BePROF - Becoming a Professional Nurse*, 2021). Volunteer nurse mentors who met the inclusion criteria (further described in the 'Materials and methods' section) were invited to attend online workshops and introduced to the project and the intervention. The mentees (n = 48) were matched with nurse mentors (n = 41) at their units, with mentors possibly having more than one mentee. The nurse mentors and mentees had mentoring sessions at their respective units. The research group created a template for a voluntary written agreement between nurse mentors, mentees, and unit leaders regarding responsibilities. The mentoring sessions were scheduled by the nurse mentor and mentee and held every 3–4 weeks, based on need. The

content of the sessions was collectively decided by the nurse mentor and mentee, also based on need.

Mentor education

The mentor education consisted of four three-hour workshops that were intended to prepare the nurse mentors for their roles and support them in these. The first workshop introduced the nurse mentors to a digital platform and its learning materials, communications channels, and tools for structuring mentoring conversations, such as a reflection book and conversation cards. The workshop also explored the transition phases for NQNs. The nurse mentors engaged in discussions regarding the concept of mentoring, including their expectations regarding the mentor role, preparation strategies, and the benefits of mentoring. Personal experiences were shared, and preliminary findings from earlier research interviews within the project were presented.

The second workshop focused on identifying the interpersonal strategies needed to effectively support NQNs, i.e., the mentees. Key topics included conversation techniques, active listening, and fostering meaningful dialogue to promote learning. In the third workshop, the nurse mentors worked with scenarios related to mentoring. The workshop emphasized reflective practice, and focused on helping the nurse mentors to develop strategies for navigating complex situations and support mentees effectively. The final workshop addressed strategies for fostering a positive learning environment and mentorship culture, and creating feedback loops to ensure that identified needs are communicated and addressed within the workplace.

Theoretical framework

The theoretical foundation of this thesis is drawn from the works of Duchscher (2008, 2009) and Dall'Alba (2013), which offer complementary perspectives on transition and professional development. These frameworks are particularly useful for understanding the early experiences of NQNs and their needs, as well as the experiences of nurse mentors regarding their professional identity and development. Duchscher outlines three phases of transition:

1. *Doing*: Characterized by learning, performing, concealing vulnerability, adjusting, and accommodating.
2. *Being*: Involves searching for meaning, examining experiences, doubting, questioning, and beginning to reveal one's professional self.
3. *Knowing*: Marked by separating from initial expectations, recovering from earlier challenges, exploring new understandings, critiquing, and gradually accepting one's professional role.

While Duchscher's model is linear, Dall'Alba offers a more fluid and integrated conceptualization of professional *becoming*, emphasizing professional development that goes beyond knowledge and skills acquisition to also encompass the ongoing formation of identity. Central to Dall'Alba's theory is the dynamic interplay between *knowing*, *acting*, and *being*, which coexist and evolve continuously throughout a professional career. Becoming a professional, from this perspective, entails not only navigating challenges and acquiring competencies but undergoing a transformative process of integrating one's actions and understanding with an evolving sense of self.

The origins of transition theory can be traced back to Meleis (2010), who pioneered nursing transition theory in the 1970s, defining transition as "a passage or movement from one state, condition, or place to another" (p. 38), and emphasizing the accompanying shifts in knowledge, behavior, and self-perception. Meleis described various forms of transition—developmental, situational, health-illness related, and organizational—all of which involve adaptation to new roles and identities.

Moreover, Benner's (1984) *From Novice to Expert* theory contributes to understanding professional transition. Benner proposed five stages of nursing proficiency—novice, advanced beginner, competent, proficient, and expert—based on clinical experience and contextual understanding. In relation to Duchscher's framework, Benner's novices and advanced beginners can be seen to occupy the *doing* and *being* stages, while the advanced beginner aligns with the *knowing* stage. Benner's competent nurse, who typically has two to three years of experience, may be considered to have moved beyond the transitional period. Proficient and expert nurses demonstrate holistic thinking and flexible performance, reflecting a mature integration of knowledge and identity.

These theoretical perspectives, particularly those of Duchscher (2008) and Dall'Alba (2013), directly informed the design of the mentorship intervention described in this thesis, shaping the mentor education and approach to mentoring during the NQN transition. Duchscher's stage-based theory was used to address the transitional journey of the mentees, and to provide insights regarding how nurse mentors can support mentees through these critical phases, and how being a nurse mentor can, in turn, prompt reflection on one's own professional identity. Dall'Alba's theory, with its emphasis on the ongoing interplay between knowing, acting, and being, supported the interpretation of the development of the nurse mentors. While it was not used as a deductive framework during the analysis of the separate studies, it was used as an interpretive lens to synthesize the results of the research.

Rationale

As outlined in the 'Background' section of this thesis, there is a pressing need for well-developed support structures for RNs within healthcare organizations. Mentoring has been shown to foster healthier working environments, improve retention, and enhance JS. However, existing research on mentoring remains limited, particularly regarding the perspectives of nurse mentors. Nurse mentors play a pivotal, yet often underexplored, role in supporting professional transitions. Their own development, challenges, and needs are frequently overlooked.

Research on JS, NPC, and SE in a Nordic context, particularly in relation to the experience levels of RNs, is limited. On this basis, Study I was conducted with a multicenter design to capture diverse data across organizational settings and regions, ensuring that the findings were not confined to a single institutional culture. Building on this, Study II explored mentoring from the perspective of experienced RNs, recognizing the importance of understanding their roles and challenges as nurse mentors; the knowledge obtained was used to design an intervention grounded in real-world experiences, rather than top-down assumptions.

Study III addressed the lack of research on being and becoming a mentor by exploring the experiences of nurse mentors during a mentorship intervention. Given the challenges of sustaining mentorship programs over time, a mixed-methods approach was used to capture both the depth of qualitative insights and the structure of quantitative data. Finally, Study IV offered a more holistic view on the prerequisites for mentoring from the perspectives of nurse mentors, and contributed valuable knowledge regarding an underexplored area.

Together, these studies address critical gaps in the literature by examining mentoring, with a particular focus on the experiences of nurse mentors. Filling these gaps is essential not only for understanding the role and value of mentoring, but for developing lasting, evidence-based mentorship structures that support the well-being, retention, and professional growth of RNs. Ultimately, such structures contribute to safer, more supportive working environments, leading in turn to higher-quality and safer patient care.

Aim

The aim of this thesis was to explore mentoring within the nursing profession by examining registered nurses' job satisfaction, professional competence, and self-efficacy at different work experience levels, and by exploring nurse mentors' experiences, development, and the prerequisites for mentoring in the context of a mentoring intervention.

Specific aims

Study I: To investigate job satisfaction, professional competence, and self-efficacy among registered nurses in Sweden and Norway, and to compare newly qualified nurses, medium-term work-experienced, and long-term work-experienced registered nurses.

Study II: To describe registered nurses' experiences of being a mentor for newly qualified nurses.

Study III: To explore how a structured mentoring intervention influences nurse mentors' clinical teaching behavior, self-efficacy, and experiences of their professional role development.

Study IV: To explore nurse mentors' perspectives on the prerequisites for mentoring, following their participation in a mentoring intervention.

Materials and methods

This chapter presents the methodological framework of the thesis. It begins with an overview of the ontological and epistemological approaches, which is followed by a description of the design of the studies and the research context and setting. Thereafter, the methodology of each study is outlined in sequence: first, the pre-intervention studies (I and II), and then the post-intervention studies (III and IV).

Ontological and epistemological approaches

The ontological approach used in this thesis was grounded in a social constructivist paradigm, the worldview of which is shaped by the participants and their views and opinions, as well as by social understanding and relationships. Building on the individual construction of social reality and the inherently social nature of human life, this approach encourages participants to tell their own stories (Boyland, 2019). Guided by this ontological stance, the research explored how nurse mentors construct meaning around their roles, responsibilities, and relationships, and how these interpretations are shaped by broader social, cultural, and institutional contexts. This perspective recognizes that mentoring is not a static nor universally defined practice, but one that is continually shaped by the interactions and interpretations of those involved.

The epistemological approach was grounded in interpretivism, where I, as the researcher, was part of the research; I interpreted the data, and as such could never be fully objective and removed from the research (Walsham, 2006). This thesis was conducted within the framework of an action research project, which has the aim of not only generating knowledge but fostering practical improvements in nurse mentoring. Action research, which is characterized by its participatory and iterative nature (Williamson et al., 2012), aligns with the overarching goal of co-creating meaningful and sustainable changes in nursing practice. The studies within this thesis were designed to involve key stakeholders, such as nurse mentors and fellow researchers, as active contributors. By embracing a co-creative approach, the research process itself served as a tool for reflection, learning, and professional development.

Throughout the work on this thesis, a continuous process of co-creation, involving not only participants but clinical partners and co-researchers,

took place. This dynamic process reflects the action research tradition of grounding change in shared experiences, practical needs, and mutual learning. I share the view that research is shaped from the bottom-up, from individuals to broad understandings, and that we as researchers should collaborate with research participants to try to change (often unjust) situations and structures. This approach can also be understood in relation to pragmatism (Creswell, 2013). Such ontological and epistemological approaches have guided the methodological approaches used in this thesis, which are qualitative, quantitative, and mixed, resulting in a comprehensive overview of the issues that have been studied.

Design

This thesis is part of the broader Swedish-Norwegian project BePROF, with an action research design (Figure 2), in line with Williamson et al. (2012). The empirical studies conducted as part of this thesis were aligned with the phases *problem identification* and *evaluation* (Figure 3).

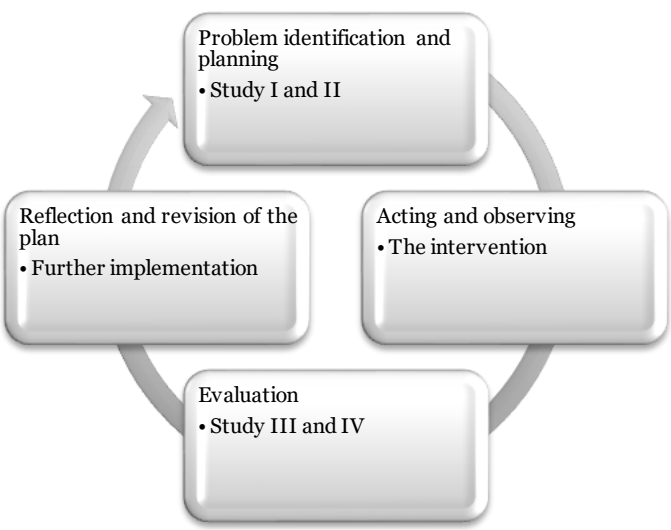


Figure 3. Studies I–IV relative to the action research phases.

Quantitative, qualitative, and mixed-method study designs were utilized (Table 1). The design of each study is described further below.

Table 1. Overview of the methodological approaches used in Studies I–IV.

	Design	Participants	Data collection	Data analysis
I	Quantitative cross-sectional study	n = 1137	Questionnaire; COPSOQ III, OSS-SF, NPC-SF	ANOVA, Kruskal-Wallis
II	Qualitative interview study	n = 21	Semi-structured individual interviews	Qualitative content analysis
III	Convergent mixed-methods study	n = 52 baseline n = 30 post I n = 17 post II	Questionnaire; COPSOQ III, OSS-SF, CTBI-23	Wilcoxon signed rank
		n = 19*	Semi-structured focus group interviews	Qualitative content analysis Triangulation
IV	Qualitative interview study	n = 19*	Semi-structured focus group interviews	Qualitative content analysis

*COPSOQ III = Copenhagen Psychosocial Questionnaire. OSS-SF = Occupational Self-Efficacy Scale Short Form. NPC-SF = Nurse Professional Competence Short Form. CTBI-23 = Clinical Teaching Behavior Inventory. *Same sample/participants*

In combining varied study designs, the goal was to obtain results that could complement one another and contribute knowledge via different methodological approaches and participant perspectives. In 2021, RNs' self-rated JS, NPC and SE were investigated in a cross-sectional survey (Study I), and RNs' experiences of being mentors were explored using qualitative interviews (Study II). These results were used in the design of the intervention. The nurse mentors in Studies III and IV were not passive recipients of an intervention, but actively contributed to its content, structure, and progress. While conducting the intervention, they were in close dialog with the researchers via workshops, reflection meetings, and informal feedback sessions.

Context and setting

There are key similarities and differences between Sweden and Norway in terms of the organization of healthcare. Sweden's healthcare is decentralized, with the country's 21 regional county councils possessing significant autonomy and responsibility for delivering and financing

healthcare, including hospitals and specialized care. The Ministry of Health and Social Affairs (*Socialdepartementet*) sets overarching national health policies and provides a regulatory framework. The 290 municipalities of Sweden manage care services for older people and for persons with disabilities, along with school health services (Government Offices of Sweden, 2025).

Norway's healthcare system differs from Sweden in that it has a semi-decentralized structure. Norway's healthcare system is primarily state-funded and publicly governed, but has a regional structure for service delivery. The Ministry of Health and Care Services (*Helse- og omsorgsdepartementet*) oversees national health policy, while responsibility for planning, providing, and managing specialist healthcare services such as hospitals is divided between four Regional Health Authorities of the 15 counties (*Fylker*). The 357 municipalities manage and fund primary healthcare services, such as general practitioners and local health centers as well as care services for older people (Government of Norway, 2025).

The counties that participated in the studies presented in this thesis are situated in the northern parts of Sweden and Norway, with several rural areas. Västerbotten county in Sweden consists of 15 municipalities, has a population of 281,138, and a population density of 5.1 residents per km² (Statistics Sweden, 2024). Nordland county in Norway consists of 41 municipalities, has a population of 243,385, and a population density of 6 residents per km² (Statistics Norway, 2024).

All of the healthcare units in Västerbotten, Sweden, and Nordland, Norway, were invited to participate in the BePROF project. A total of 24 units—13 from Sweden and 11 from Norway—took part. These represented a diverse range of healthcare settings, including specialized hospital units—medical, surgical, oncology, and intensive and acute care—and primary care centers, urgent care facilities, home healthcare services, and nursing homes.

Before the intervention

Study I

Design

A multicenter cross-sectional design was employed for Study I, to capture the characteristics of a population across multiple sites at a

specific point in time; this was deemed appropriate for generating foundational evidence to inform the development of the intervention, in line with Wang and Cheng (2020). The objective was to compare JS, NPC, and SE among NQNs, medium-term work-experienced, and long-term work-experienced RNs in Sweden and Norway, published in Kallerhult Hermansson, Norström, et al. (2024).

Participants and sampling

In Study I, the targeted population were all RNs working at healthcare units in Västerbotten and Nordland. The inclusion criteria were RNs actively engaged in patient care; those working exclusively in non-clinical roles, such as department managers and administrative staff, were excluded. The participants were invited via an email survey, which in Sweden were distributed to all RNs employed in hospital and primary healthcare units through the regional office of Västerbotten county. In Norway, the surveys were distributed through the registers of the Norwegian Nurses' Organization and the Norwegian Union of Municipal and General Employees. Approximately 4000 RNs received the survey; of these, an unknown number, rather than having formal employment as RNs, had roles such as nurse manager, research nurse, or doctoral student, and were advised not to answer the survey. The study information clearly stated that only those who were currently working in a clinical nursing role should respond. A total of 1145 RNs responded to the survey; after excluding eight Swedish respondents who held administrative positions, the final sample consisted of 1137 participants.

Of the 1137 participants, 56.4% (n = 641) worked in Sweden, and 43.6% (n = 496) in Norway. Of the respondents, 84.7% (n = 963) were women. The largest age group was those born between 1980 and 1994, representing 39.2% (n = 446) of the respondents. In terms of employment status, 94.1% (n = 1070) held permanent positions, and 67.7% (n = 770) worked full-time. Most (72.8%, n = 828) participants had six or more years of work experience as RNs; 47.6% (n = 541) had a specialist degree, and 61.9% (n = 704) worked in hospital/prehospital care.

Data collection and instruments

Data were collected through a web survey, a link to which was emailed to RNs working in the participating counties. The survey was sent out in three rounds in both countries: an initial email in September 2021, a reminder email after approximately three weeks, and a second reminder after another three weeks. The study included 46 questions from

validated instruments. All instruments are scored on a positive scale, i.e., higher scores corresponding to higher self-rated JS, NPC, and SE.

The *Copenhagen Psychosocial Questionnaire (COPSOQ III)*, recognized as a risk-assessment tool by the International Labor Organization and the World Health Organization (Berthelsen et al., 2018), was used to assess JS. COPSOQ III was originally developed in 2000, and is available in over 25 languages. Responses are rated on a five-point Likert scale: 0 (very unsatisfied), 25 (unsatisfied), 50 (neither/nor), 75 (satisfied), 100 (very satisfied). Guided by the COPSOQ III scoring guidelines (Berthelsen et al., 2018), a median score was calculated on a scale of 0–100. Additionally, a median score for the core item "Your job as a whole, everything taken into consideration" was computed. The national reference value for JS in Sweden is 64.4 (all work groups), and 68 for RNs (COPSOQ, 2025). The national reference values in Norway have not yet been established. In this study, Cronbach's alpha coefficient was 0.773, showing acceptable internal consistency.

The *Nurse Professional Competence Short Form (NPC-SF)* (Nilsson et al., 2018) was used to assess NPC. The NPC research project was initiated in 2007 by researchers in Sweden, and resulted in the NPC scale. This has an original version (88 items) and a short version (35 items), and is grounded in the formal competence requirements for RNs (Svensk sjuksköterskeförening, 2024). The NPC Scale has been translated into several languages (Gardulf et al., 2019), and the SF version comprises 35 items distributed across six domains: *Nursing care* (five items), *Value-based nursing care* (five items), *Medical and technical care* (six items), *Care pedagogics* (five items), *Documentation and administration of nursing care* (eight items), and *Development, leadership, and organization of nursing care* (six items). Responses were rated on a seven-point Likert scale: 1 (very low), 2 (low), 3 (quite low), 4 (neither high nor low), 5 (quite high), 6 (high), 7 (very high). In line with established scoring guidelines (Nilsson et al., 2014, 2018), scores for each domain were calculated by summing the item values; this sum was divided by the maximum possible score for that domain and multiplied by 100, resulting in a score from 1 to 100 for each domain. In this study, Cronbach's alpha coefficient was 0.775–0.897 in each domain, showing good internal consistency in the domains.

Two instruments were used to assess SE. In Sweden, the short version of the *Occupational Self-Efficacy Scale (OSS-SF)* (Rigotti et al., 2008; Schyns & von Collani, 2002) was used. It consists of six items on a six-point Likert-type scale, ranging from 1 (not at all true) to 6 (completely

true), giving possible total scores ranging from 6 to 36. The scale is recommended for comparative use in German, Swedish, Belgian, Spanish, and British organizational contexts, and its structural and construct validity for the Swedish context has been demonstrated by Rigotti et al. (2008). In this study, Cronbach's alpha coefficient was 0.820, showing good internal consistency. In Norway, the *COPSOQ III self-efficacy dimension* was used; this includes six items rated on a four-point Likert scale: 0 (does not fit), 33 (fits a little), 67 (fits quite well), and 100 (fits perfectly). Guided by COPSOQ III scoring guidelines (Berthelsen et al., 2018), a median scale score was calculated on a 0–100 scale. In this study, Cronbach's alpha coefficient was 0.785, showing good internal consistency.

Data analysis

Data were analyzed with descriptive and comparative statistics using IBM® SPSS® Statistics version 29 (IBM Corp, Armonk, NY). The participants were categorized as "NQN" (≤1.5 years of work experience), "medium-term work experience" (1.6 to 5 years of work experience), and "long-term work experience" (≥6 years of work experience). A Chi-square test was used to compare differences in demographic variables between the groups. The scores for NPC and SE (Sweden) were presented with mean, standard deviation, and confidence intervals (95%). Differences between the groups regarding these variables were analyzed using one-way between-groups analysis of variance (ANOVA). The distributions of the variables JS and SE (Norway) were skewed, and so descriptive and comparative statistics for these outcome variables were presented with medians and quartiles. The differences between the groups regarding these variables were analyzed using the non-parametric Kruskal-Wallis test. When the comparative tests revealed statistically significant differences, a post-hoc Bonferroni test was used for multiple comparisons. The significance level was 0.05 in all analyses.

Study II

Design

Study II had a qualitative descriptive design involving individual interviews; the design were selected in order to gain rich, detailed insight into the RNs' experiences of being mentors, consistent with the approach described by Brinkmann and Kvale (2018).

Participants and sampling

The sampling was purposive, as described by Creswell (2013); i.e., to ensure the inclusion of individuals with substantial knowledge of mentoring, we sought participants with diverse experiences, including variation as regards background, how many times they had been a mentor, and mentoring routines within their respective units. Notably, mentoring practices differed both within and between countries. Therefore, it was deemed to be essential to recruit RNs from a range of contexts, including various hospital settings and municipal care areas, to obtain a comprehensive and representative sample for an in-depth exploration of being a mentor. The recruitment process began with an email invitation being sent to unit leaders and managers across hospital and municipal care units in Västerbotten and Nordland. Leaders from 13 Swedish and eight Norwegian units responded to the invitation and assessed interest among RNs, providing contact details for those who were willing to participate. The inclusion criteria required participants to have mentored at least one NQN, have permanent part- or full-time (75–100%) employment as an RN, and be proficient in Swedish or Norwegian.

A total of 25 RNs were invited to participate; four Swedish RNs declined, and all invited Norwegian RNs accepted, meaning that 21 RNs took part in the study: 13 from Sweden and eight from Norway. The median age was 43, with participants ranging from 31 to 59 years old. The majority were employed in hospital-based care (n = 15), working in units such as surgical, medical, neurological, oncological, neonatal, and intensive care. The remaining six participants were from primary healthcare and municipal care services.

Data collection

Between January and May 2021, semi-structured one-on-one interviews were conducted via online video meetings. The BePROF research team developed an interview guide which can be found as a supplementary file in the published paper (Kallerhult Hermansson, Kasén, et al., 2024), informed by existing literature on mentoring and transition theory (Dall'Alba, 2013; Duchscher, 2008). This guide underwent review by reference groups from participating municipalities and counties prior to the data collection. The guide consisted of three core interview questions, which were designed to be open-ended and reflective, including "Can you tell me what it means to be a mentor?". The interviews were conducted by members of the BePROF research team,

and had a median duration of 59 minutes. Each interview was carried out in either Swedish or Norwegian, depending on the participant's location, and was audio-recorded with consent. The recordings were transcribed verbatim in the original language by members of the research team and pseudonymized.

Data analysis

Data were analyzed using inductive qualitative content analysis (Graneheim et al., 2017; Graneheim & Lundman, 2004; Lindgren et al., 2020). This methodology recognizes that reality can be interpreted in multiple ways, and that these are shaped by subjective experiences and the collaborative construction of meaning between researchers and participants (Graneheim et al., 2017; Lindgren et al., 2020).

First, the interview transcripts were read repeatedly to gain an overall understanding of their content. Next, meaning units relevant to the study aim were identified; these were condensed, while retaining the essential meaning, to make them more concise. Each condensed meaning unit was then assigned a code relating to its core idea or meaning. Once the coding process was complete, the codes were systematically grouped based on similarities in content. These were then interpreted and abstracted into subthemes, which in turn were grouped, abstracted, and interpreted into themes. If content was consistent across themes, it was interpreted as a main theme. The analysis involved both manifest and latent elements. Since the interviews were conducted and transcribed in Swedish and Norwegian, the research team engaged in a collaborative and reflective analysis process. The team members supported one another in interpreting meaning, ensuring consistency, and clarifying nuances across the two languages. The analysis process was not strictly linear; rather, it was iterative, requiring continuous movement between the text, codes, and abstraction levels to refine interpretations, as described by Lindgren et al. (2020).

After the intervention

Study III

Design

Study III used a convergent parallel mixed-methods design to explore CTB, SE, and experiences of professional role development of nurse mentors. Equal emphasis was placed on the collection of quantitative

and qualitative data; the former consisted of survey data, while the latter consisted of focus group data. Data were analyzed separately using respective methodological approaches, before being integrated during the final triangulation. Thus, the findings were compared to facilitate identification of areas of convergence and divergence, in line with the methodology of Creswell and Plano Clark (2011).

Participants and sampling

The inclusion criteria for participation in the mentorship intervention were work experience as an RN of at least 1.5 years, experience of mentoring at least one NQN, have permanent part- or full-time (75–100%) employment, and proficiency in Swedish or Norwegian. Unit leaders at the participating hospital and municipal care units in Västerbotten and Nordland were responsible for recruiting nurse mentors for the intervention. Initially, 60 nurse mentors were recruited; however, possibly due to the increased demand of the COVID-19 pandemic, dropouts were noticed. Other dropouts during the intervention were influenced by factors such as sick leave and other unavoidable circumstances. A total of 41 nurse mentors completed the intervention: 27 in Sweden and 14 in Norway.

Of the 60 recruited nurse mentors, 52 completed the baseline survey before the intervention and were included in baseline data analysis in Study III. After the intervention, all remaining nurse mentors (n = 41) were invited by receiving emails consisting of post-test surveys. The recruitment process for the focus groups began in April 2022 with an initial email invitation, followed by a reminder after two weeks and a second reminder three weeks later. The email provided details about the study and suggested dates and times for focus groups. Additionally, intervention units were contacted by telephone to invite participating nurse mentors to focus group interviews. A total of 30 nurse mentors participated in post-test I and 17 in post-test II, and 19 nurse mentors participated in the focus groups. An overview of the participating nurse mentors in and dropouts from the intervention is shown in Table 2, and an overview of the participant demographics is shown in Table 3.

Table 2. Overview of participants in and dropouts from the mentorship intervention.

	Sweden (*n*)	Norway (*n*)	Total (*n*)
Recruited nurse mentors	37	23	60
Answered baseline survey	29	23	52
Dropouts			
Sick leave	3	1	4
No mentee/mentee dropout	2	4	6
Changed employment	2	-	2
No allocated time for mentoring	-	2	2
Reason not stated	3	2	5
Completed intervention	27	14	41
Answered post-test I	18	12	30
Focus group participation	9	10	19
Answered post-test II	9	8	17

Table 3. Participant demographics in Studies III and IV. Genders are not disclosed for focus group participants due to risk of identification.

	Study III (Baseline)		Studies III+IV (Focus groups)	
	Sweden (*n* = 29)	Norway (*n* = 23)	Sweden (*n* = 9)	Norway (*n* = 10)
Gender				
Female (*n*)	24	20	n/a	n/a
Male (*n*)	5	3	n/a	n/a
Age range (*years*)	25–61	25–63	26–49	31–59
Education level				
Specialist/Master's degree (*n*)	5	11	2	5
Nursing/Bachelor's degree (*n*)	24	12	7	5
Work experience range (*years*)	2–40	2–40	2–23	2–22
Workplace				
Municipal care (*n*)	2	9	1	6
Hospital care (*n*)	27	8	8	4
Other workplace* (*n*)	-	6	-	-

'Other workplace' referred to units such as primary health care.

Quantitative data collection

Quantitative data were collected on three occasions: before the intervention (September/October 2021), immediately after the intervention (April/May 2022), and eight months later

(November/December 2022 - January 2023). The surveys were coded to facilitate data collection and pairwise statistical analysis. The study included 28 questions from validated instruments: the SE dimension from COPSOQ III and the OSS-SF (described under "Instruments" in Study I), and the *Clinical Teaching Behavior Inventory (CTBI-23)*. The CTBI-23 was developed by Lee-Hsieh et al. (2016), and assesses 23 items across six domains: *Committing to teaching* (four items)*, Building a learning atmosphere* (five items)*, Using appropriate teaching strategies* (five items)*, Guiding inter-professional communication* (three items)*, Providing feedback and evaluation* (three items), and *Showing concern and support* (three items). The items are rated on a five-point Likert scale: 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree), giving a total score from 23 to 115. The construct validity, internal consistency, and reliability of the CTBI-23 has been demonstrated by Lee-Hsieh et al. (2016). One item related to student assessment ("I use evaluation forms to objectively assess") was removed due to not being relevant in this study, giving a maximum total score of 110. In addition, scores were calculated for each domain. The CTB-23 is scored on a positive scale, i.e., high scores correspond to high self-rated CTB.

With regard to internal consistency, Cronbach's alpha coefficient was 0.839 for the OSS in Sweden, and 0.823 for the SE scale in Norway. Cronbach's alpha coefficient was 0.869–0.888 for the CTB-23, and thus there was good internal consistency. There are no predefined cutoff values for categorizing scores as "high" or "low" on these instruments. In this study, scores of or above 75% of the maximum possible score were classified as "high", based on the approach to percentile-based or proportion-based classifications in similar research (DeCoster et al., 2011).

Qualitative data collection

In Study III, qualitative data were collected during focus group interviews held after the intervention, in May–June 2022 (further described under "Study IV"). The qualitative data were answers to open questions regarding the roles of nurse mentors, and whether and how they had developed during the intervention. For example: "Tell us about your experience of being a mentor" (Interview guide can be found as supplementary file in Paper III).

Analysis and triangulation

The quantitative data were analyzed with descriptive and comparative statistics using IBM® SPSS® Statistics version 29 (IBM Corp, Armonk, NY). The nurse mentors' ratings of their CTB and SE were presented as medians and quartiles, and their ratings before and after the intervention were compared using a Wilcoxon signed-rank test. The significance level was 0.05 in all analyses. The qualitative data were analyzed using inductive qualitative content analysis (Graneheim et al., 2017; Graneheim & Lundman, 2004; Lindgren et al., 2020), as described under "Study II".

Data were triangulated by integrating the two datasets. Specifically, qualitative themes were compared with ratings on the instruments to identify points of convergence and divergence, in line with Creswell and Plano Clark (2011). After the nurse mentors' scores had been organized into a table, the themes and sub-themes from the qualitative results were aligned with the quantitative results, and areas of convergence and divergence were documented in the final column to facilitate comprehensive interpretation (Table 4).

Table 4. Example of convergent mixed-methods analysis used during Study III.

Quantitative scores	Qualitative themes	Convergence and divergence
Domain: *Building a learning atmosphere*; both Swedish and Norwegian nurse mentors rated this high	Developing mentoring skills; Fostering the mentoring relationship	The quantitative domain included statements such as: "I plan learning objectives with the new nurse", "I give praise when appropriate", and "I invite the new nurse to reach out to me". The high scores align with subthemes such as *Promoting reflective dialog with the mentee* and *Refining adaptability and availability as a mentor*, within the theme *Developing mentoring skills*; and *Keeping focus on the mentee* within the theme *Fostering the mentoring relationship*. These ratings converged with the participants' emphasis on maintaining a supportive tone, validating feelings, and being consistently available.

Study IV

Design

Study IV was a qualitative descriptive study that explored the perspectives of nurse mentors regarding the prerequisites for mentoring, published in Kallerhult Hermansson et al. (2025). Focus group interviews were deemed appropriate as they can generate rich insights through exploration of a common phenomenon from multiple perspectives among participants with shared experiences, as described by Krueger (2014).

Participants and sampling

In Study IV, all the nurse mentors in the intervention were invited to participate. This study entails data from the same focus groups as described under "Study III".

Data collection

Each focus group consisted of three to six participants, and there were two groups in each country. An additional group was planned in Sweden, but ultimately took the form of an individual interview due to last-minute cancellations by other participants; as a result, there were a total of four focus group interviews and one individual interview. The interviews were conducted online in May and June 2022. A semi-structured interview guide was developed based on literature, expert input, and the content of the intervention. The questions were intended to capture the views of nurse mentors on the prerequisites for effective mentoring. For example: "Tell us about the learning culture at your workplace. Do you feel that it has changed during the project?". There were also open-ended questions, such as: "If you were allowed to develop support for mentors, tell us about your vision." The moderators encouraged the participants to speak freely, asking questions such as: "Is there anything you want to tell us about mentoring that we didn't ask about?" This prompted open and reflective discussions. The question flow in the guide was assessed by interviewing an RN with experience of mentoring who was not involved in the intervention, leading to minor grammatical adjustments.

The members of the research group moderated the interviews. The mean interview length was 66 minutes. Each interview was carried out in either Swedish or Norwegian, depending on the participant's location,

and was audio-recorded with consent. The recordings were transcribed verbatim in their original language by members of the research team, and pseudonymized.

Data analysis

As the focus group data were used in two studies (III and IV), the initial phase of the analysis process involved a systematic approach to organizing the data. Transcripts were color-coded to correspond to the specific aims of each study: data relevant to Study III, which explored the experiences of nurse mentors regarding professional role development, were marked in one color, while data regarding Study IV, which focused on the perspectives of nurse mentors on the prerequisites for mentoring, were highlighted in another. The data were then analyzed using qualitative content analysis (Graneheim et al., 2017; Graneheim & Lundman, 2004; Lindgren et al., 2020), as described under "Study II".

Interpretation using the theoretical framework

While transition theory (Dall'Alba, 2013; Duchscher, 2008) was not employed as an interpretive lens within the individual studies, it was used to frame and contextualize the presentation of results in this thesis. During the writing of this thesis, the findings of each study were revisited with a focus on identifying recurring patterns, themes, and experiences related to professional transitions. Aspects such as role adaptation, identity development, and support structures were noted. For example, the evolving roles and reflections of the nurse mentors were linked to phases of role transition, while organizational support and challenges were connected to the conditions that influence transitions. This approach added depth to the results, since it allowed for a cohesive interpretation across studies, highlighting patterns and insights related to the professional transitions, identity formation, and role development of nurse mentors.

Ethics

The relevant ethics committees in Sweden and Norway; the Swedish Ethical Review Authority (Dnr 2020-06187), and the Norwegian Centre for Research Data (NSD, No. 148896) approved the studies. The studies adhered to the ethical principles of human research as set out in the Declaration of Helsinki (World Medical Association, 2001). While the data were not classified as sensitive personal data, special attention was paid to protecting participant confidentiality, as described by Polit and Beck (2021), particularly as the studies were conducted in sparsely populated regions where indirect identification could be possible. Data collection and recruitment took place via secure regional offices and registry systems, in accordance with General Data Protection Regulation (GDPR, 2016) and national data-protection protocols. Data were securely stored on encrypted, access-restricted servers at each collaborating university, and shared across sites only in pseudonymized form for the purpose of multicenter collaboration. Legal agreements were established and signed by the leaders with signing authority at each university.

The nurse mentors were recruited primarily by their unit managers, which may have run the risk of perceived coercion, confidentiality concerns, and selection bias, as described by Steinke (2004). To mitigate these risks, it was emphasized that participation was entirely voluntary, with no consequences for those who chose not to participate. During the individual interviews, the potential risks included emotional discomfort when discussing sensitive topics related to the working environment and well-being. During the focus groups, measures were taken to minimize risks relating to group dynamics, such as dominant voices and concerns regarding confidentiality. The moderators were experienced in facilitating balanced discussion and creating a respectful environment where all participants could contribute freely. All participants were reminded of the importance of confidentiality regarding what was shared in the group, in line with Krueger (2014). Following transcription, all interviews were pseudonymized to ensure participant confidentiality. Throughout the studies, an approach of respect for participants' autonomy, privacy, and dignity was practiced, in line with the core ethical principles of respect for persons, beneficence, and justice; this was fundamental to all methodological decisions (International Council of Nurses, 2021b; Polit & Beck, 2021).

Use of AI

Artificial intelligence (AI) tools, including large language models such as ChatGPT and Microsoft Copilot, were used solely for language editing, grammar correction, and improving clarity during the writing of this thesis. No AI-generated content has been used during data analysis, interpretation of results, nor formulation of original research ideas. The academic integrity and originality of the research are the responsibility of myself, as the author of this thesis, with the support of supervisors and project colleagues.

Results

This chapter begins with a summary of the main findings, followed by a presentation of the results organized into two main sections: before and after the intervention. Each section concludes with an interpretation of the results based on transition theory, which was used as a theoretical framework to contextualize the findings. The qualitative results are supported by quotes, translated into English by me as the author of the thesis. In the quotes, 'SWE' means 'Sweden' and 'NOR' is 'Norway'.

The main findings are that the nurse mentors demonstrated strong motivation and ability to take on the role of mentors. However, to strengthen their potential in this role and ensure that they are able to perform mentoring to the fullest, they require adequate organizational support, including sufficient time and resources. The results suggest that, when it is embedded in a supportive organizational framework, structured mentorship can offer benefits for nurse mentors, even in contexts where RNs may otherwise experience lower JS. The results, both before and after the intervention, highlight a clear need for improved support for nurse mentors, and emphasize the importance of structure and stability within the mentoring processes of organizations.

Before the intervention

Studies I and II showed variations in JS, NPC, and SE between different work-experience groups, and that being a mentor involves creating a sense of safety and promoting learning in complex and stressful working environments.

JS, NPC, and SE across career stages

In Study I, the RNs with the lowest JS were those with medium-term work experience. The RNs with the highest NPC across all domains were those with long-term work experience. In Figure 4, JS and NPC scores are presented together, as both were assessed on a 0–100 scale and using the same instruments in the two countries. SE is excluded from the graph due to the use of different scales in Sweden and Norway.

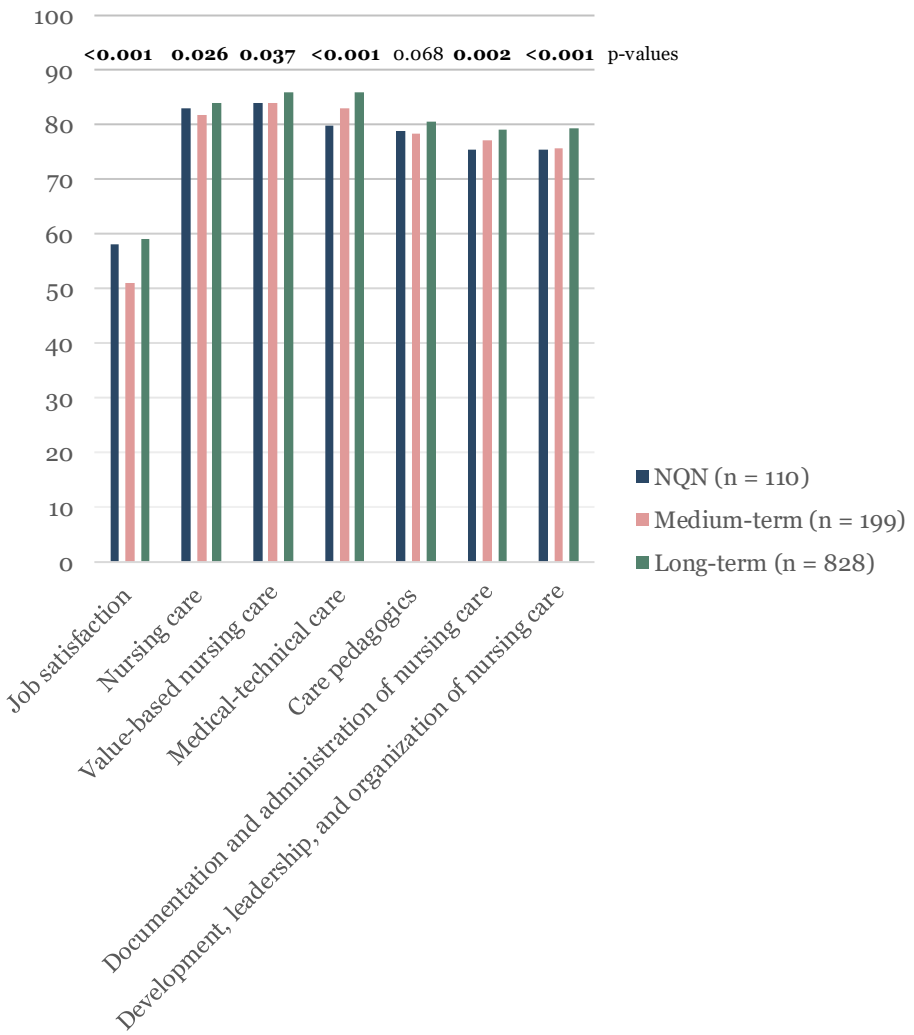


Figure 4. Participant job satisfaction and nurse professional competence (0–100 scale) in Study I. p-values (Kruskal-Wallis/ANOVA) indicate group differences but not their exact location; significant values are presented in bold.

JS was significantly lower in medium-term RNs (Md = 51.0) compared to both NQNs (Md = 58.2, p = 0.011) and long-term experienced RNs (Md = 59.1, p < 0.001). No significant difference was found between NQNs and long-term RNs regarding JS. For NPC, significant differences were primarily observed between NQNs and long-term RNs. All groups rated *Value-based nursing care* highest (M = 84.0–85.9) of all domains,

with long-term RNs also rating the domain *Medical-technical care* highest (M = 85.9). The lowest-rated domain for NQNs and long-term RNs was *Documentation and administration of nursing care* (M = 75.4–79.0), while medium-term RNs rated *Development, leadership, and organization of nursing care* lowest (M = 75.6).

Regarding SE, no differences were found between the experience groups in Norway. In Sweden, SE was rated highest by long-term RNs (M = 28.1), who rated it significantly higher than both NQNs (M = 24.5, $p < 0.001$) and medium-term RNs (M = 25.4, $p < 0.001$). The lowest-rated SE item among the Swedish participants was "My studies have prepared me for my current position".

Creating safe and supportive environments

The results of Study II showed that *being a mentor plays a crucial role in establishing safety in complex work environments*. This was a main theme that highlighted the experiences of the participants when creating safe spaces for NQNs, which contributed to their own professional growth, and fostered a learning environment in demanding, high-stress settings. While the role of nurse mentor was perceived as ambiguous and in need of clearer definition, the participants described feeling motivated to take on this role. The main theme was interpreted from three themes: *Feeling motivated in being a mentor; Continuously developing the learning environment*; and *Navigating obstacles and cultivating support*.

The participants expressed that certain factors promote mentoring, including opportunities for professional growth and the chance to serve as a role model. These were captured in the first theme: *Feeling motivated in being a mentor*. The professional backgrounds of the RNs were seen as being foundational to their mentoring, and their experience was emphasized as a key asset in effectively supporting and guiding others. The participants stressed the importance of being competent, approachable, and capable of establishing trust in fostering positive mentoring relationships. A non-judgmental and open demeanor was viewed as essential, as described in the following quote:

> *And that's perhaps what I think my role as a mentor is, to actually dare to sit and listen and talk about it. You don't always have to have the answers.* (Study II, Interview 5, SWE)

They also described traits such as empathy, patience, and sensitivity as being crucial. Being a role model, according to the participants, could take multiple forms: offering emotional support, serving as a professional example, and simply being available to the mentee. The participants viewed mentoring as an integral part of their professional roles, something that was naturally part of being an RN. Many expressed appreciation for the positive feedback that they received from mentees, noting that the enthusiasm of mentees for learning was a source of motivation. The participants found mentoring to be personally fulfilling, and noted that it contributed to their own development. Several participants conveyed a sense of excitement about their mentoring roles, describing feeling confident in their skills, experience, and capacity to support others.

The second theme: *Continuously developing the learning environment*, encompassed efforts to create a safe atmosphere while managing challenges and adapting to the needs of mentees. The participants spoke of the rapidly evolving nature of healthcare, noting that these create difficult challenges when creating learning environments that support continuous professional development. They observed that NQNs require different kinds of support today compared to in the past. One of the participants emphasized the responsibility of being a mentor as follows:

> *So how should we lay the foundation for [the mentees] being able to meet their profession in a good way? It's about how to equip them with the backpack that they will need to carry for a long time.* (Study II, Interview 9, NOR)

The participants also described barriers such as limited time and insufficient leadership support, alongside facilitators such as having supportive colleagues; described in the third theme, *Navigating obstacles and cultivating support*. One of the participants talked about lack of time in the following way:

> *I usually go through all the material, mostly at home, the night before, I don't do it during work hours, I usually do it in my free time, unfortunately. Because we don't have any time allocated for mentorship in the actual job, it's only the actual mentor sessions...* (Study II, Interview 7, SWE)

Mentoring was seen as being facilitated by leaders being responsive, and the organizational context being stable and supportive. A culture of collegiality and mutual support was regarded as a key component of a

positive environment for mentoring. Additionally, the participants emphasized that having a structured and predictable workday enabled them to plan and carry out mentoring activities more effectively.

Transitioning towards mentor development

Interpreted through a transitional lens inspired by Duchscher (2008), participants in Study II appeared to be in the *doing* stage, moving towards *being* stage in role development as mentors. In these stages, they adjust their performance and begin searching for meaning in the role. The transition into *being* is characterized by the need for stability and support, to find themself in the role.

After the intervention

The results of Studies III and IV showed that the nurse mentors experienced personal and professional development in several areas. However, they emphasized the need for improved organizational structure and support from leaders in order to fully realize their potential in the role.

Mentor development in several areas

The results of Studies III and IV showed that mentoring fostered a strong sense of collegial support and professional identity for nurse mentors, and contributed meaningfully to the development of the next generation of RNs. The nurse mentors viewed mentoring as a meaningful, though demanding, responsibility. They also reported that assuming the role allowed them to reflect on their own practice and strengthen their professional identities.

The results of Study III showed that qualitative themes, such as *Fostering the mentoring relationship* and *Evolving the mentoring role*, were convergent with the nurse mentors' ratings of their CTB, which were predominantly high at all three time points (before and after the intervention). The integrated (triangulated) results suggest the nurse mentors experienced development during the intervention, especially in terms of their ability to form strong relationships, develop purposeful mentoring practices and skills, and define their mentoring roles. Although they initially exhibited high levels of CTB, as well as SE in Sweden, they showed ongoing development throughout the intervention.

CTB and SE over time

The quantitative results of Study III showed increased CTB in nurse mentors following the intervention, despite many having high scores (defined as over 82.5) at baseline. Among the Swedish nurse mentors, CTB had increased at post-test II (Md = 94) compared to baseline (Md = 86.5, p = 0.011) and post-test I (Md = 87, p = 0.012). Among the Norwegian nurse mentors, CTB was higher at post-test II (Md = 96) than post-test I (Md = 85, p = 0.018), although their scores at post-test I were lower than at baseline (Md = 89, p = 0.005), with no significant differences between baseline and post-test II.

The Swedish nurse mentors consistently reported SE scores at the high end of the scale throughout the study period (Md = 29–30.5). In comparison, the cross-sectional sample of Swedish RNs in Study I had slightly lower median scores (Md = 25–29). The Norwegian nurse mentors in Study III had a slightly lower SE score (Md = 66.8–72.3) than the cross-sectional sample of Norwegian RNs in Study I (Md = 73.6). No statistical tests were conducted to assess the significance of these differences; the comparisons are solely to provide context and illustrate potential variations in SE between nurse mentors and the broader RN population.

Advancing mentoring practice and growing into the role

The qualitative results of Studies III and IV showed that the nurse mentors were not, in their daily work, always able to carry out the activities that were recommended in the intervention, such as meeting their mentees, attending workshops, etc., due to barriers and challenges. Similar issues as those described in Study II were observed, such as lack of organizational structures and support from leaders. However, the nurse mentors highlighted that during the intervention, mentoring fostered personal and professional development, not only for themselves but for their mentees and a positive development of the workplace. These experiences are described in three themes in Study III: *Fostering the mentoring relationship*, *Developing mentoring skills*, and *Evolving the mentoring role.*

The nurse mentors described experiences of building trust and connection with mentees, and working to maintain focus on the mentee, forming the theme *Fostering the mentoring relationship*. They acknowledged that the connections with their mentees had developed and been shaped by individual differences in communication styles, levels of openness, and interpersonal dynamics. While some

relationships formed quickly, others took longer to establish; these differences were influenced by factors such as interpersonal chemistry and the level of self-awareness of both mentor and mentee. The nurse mentors described adopting an open-door approach, aiming to create a welcoming and accessible atmosphere to underscore reflection. One of the nurse mentors expressed this in the following way:

> *When they [the mentees] and I have an understanding that they can come to me with anything, and I'll help them work through it if needed, I believe that, just this sense of security that if they have a question they might not feel comfortable asking anyone else, they know they can turn to me and… that it's the availability, I hope.* (Study III, Focus group 2, SWE)

They also described promoting reflective dialog with their mentees and refining their adaptability as nurse mentors, forming the theme *Developing mentoring skills*. The nurse mentors described how their mentoring sessions had developed, noting a gradual shift toward more reflective and meaningful dialog:

> *For my part, at least, I've reflected more than I normally would. […] I try to reflect a lot with them. I've at least tried with the one who has been at work. I'm not sure I would have done that if I hadn't been a mentor [in the intervention].* (Study III, Focus group 4, NOR)

The nurse mentors described a shift over time toward encouraging reflection, rather than simply supplying answers, and viewed this as a more pedagogically driven approach. However, early in the process they faced difficulties in determining an effective meeting format, seeking a balance between informal, conversational exchanges and sufficient structure to keep discussions purposeful. Setting conversation goals was another challenge that was described; when the mentees did not have many questions, the nurse mentors found it hard to identify topics to focus on. The nurse mentors speculated that in many cases mentees had a reluctance to be vulnerable in the presence of nurse mentors that they did not know well. In such cases, they drew on strategies from the mentor education such as conversation cards and a reflection book, to guide topic selection and sustain engagement.

The nurse mentors also reported feeling empowered by their experiences, describing mentoring as a chance for self-reflection and skill growth that was both fulfilling and beneficial; as the theme *Evolving the mentoring role*. This growth came with difficulties,

including episodes of self-doubt and uncertainty about their impact on mentees. Such challenges were seen as inseparable from the mentoring role, underscoring its complexity. Despite these struggles, the nurse mentors expressed strong commitment to the role, linking it to broader aims such as shaping workplace culture, fostering professional growth, and strengthening their teams. They also considered how they would apply these insights beyond the intervention, as shown in the following quote:

> *And again, how to generally make things better for those who work here in the organization. And I think this is something we should be able to offer people as a minimum, proper training that makes them feel confident in what they're going to be doing and that they've understood their role in all of this. [….] It makes things so much better in the long run.* (Study III, Focus group 3, NOR)

Organizational foundations for mentoring

The results of Study IV, related to prerequisites for mentoring, consisted of a main theme: *The need for organizational structure and leaders' support to facilitate the mentoring process*. The nurse mentors identified challenges in creating a supportive environment at all stages, i.e., preparation, active mentoring, and follow-up. They emphasized the importance of continuous support from leaders, extending beyond initial stages to cover the entire mentoring journey. One of the nurse mentors highlighted the importance of leadership as follows:

> *And we have tried several times with conversations with the leader, where we have presented the plan on how it [mentoring] should be implemented, but things have just been postponed and postponed, even though the leader has been very positive about the project and how we should make it happen.* (Study IV, Focus group 3, NOR)

The nurse mentors shared experiences wherein the presence or absence of sufficient structures and supports were evident, formulated as three themes: *Creating foundations for mentoring*, *Navigating mentoring challenges in the everyday work routine*, and *Post-mentoring reflection and learning*.

Within the theme *Creating foundations for mentoring*, the mentors discussed the challenge of establishing effective mentoring routines within their units, expressing a need for a formalized framework to guide the selection of strategies so that they understand which are effective and

which are not. The structure of the intervention was difficult to follow where leader support had not been obtained. The intervention incorporated a formal responsibility agreement between the nurse mentor, a leader, and the mentee. The nurse mentors reported positive experiences when this agreement was clearly defined, communicated, and followed. However, some noted that the agreement was not consistently adhered to in practice:

> *What I don't think has worked well has to do with our end, from the employer's side. I think the level of facilitation for participating in this project has been minimal. We've been reminded like, okay, you have this and that date and so on. But when it comes to following up with mentees and facilitating conversations and such, that has been almost non-existent. That's been a problem.* (Study IV, Focus group 3, NOR)

The nurse mentors emphasized the importance of having time allocated for planning mentoring activities, as well as meeting and collaborating with fellow nurse mentors to establish a strong foundation for mentoring. They favored collaboratively designing mentoring routines, typically in groups of two to three nurse mentors per unit. They also described instances of cross-unit collaboration, which fostered opportunities for shared learning and mutual support across units. One nurse mentor shared a positive example of their unit leader allocating dedicated time for collaboration with another nurse mentor, enabling them to jointly develop the mentoring format. Although the intervention provided regular meetings and workshops for sharing experiences, attendance was limited due to lack of time and facilitation.

Within the theme *Navigating mentoring challenges in everyday work routines,* the nurse mentors described the ongoing challenge of balancing their mentoring responsibilities with the demands of their daily work. They acknowledged that urgent patient needs frequently took precedence, often resulting in the cancellation of scheduled mentoring sessions due to staff shortages. The nurse mentors emphasized the fast-paced and demanding nature of healthcare today, with mentoring often feeling like an additional duty without dedicated time allocation:

> *It's really about the time, mentorship is great, and it has been, but it's been a bit difficult to get it started because there hasn't been much time available.* (Study IV, Focus group 1, SWE)

The nurse mentors stressed the importance of leaders formally recognizing mentoring as an integral part of their professional roles, rather than viewing it as an unpaid extra task. They also emphasized the importance of cultivating a positive learning culture within their working environment. Examples were shared of encouraging experiences of working within a supportive team, including both colleagues and leadership.

Within the theme *Post-mentoring reflection and learning,* the nurse mentors expressed that they needed leaders to be more involved in evaluating their mentoring processes. They also believed that peer support and collective reflection could provide valuable assistance when facing difficulties, and facilitate learning and development following these. For this reason, they advocated for scheduled opportunities to come together and "debrief" after mentoring sessions. The nurse mentors discussed that, although their unit leader expressed interest in continuing the mentorship, no concrete plans had yet been made for implementation of this. The overarching goal of the nurse mentors was to facilitate a workplace culture wherein mentoring could be a meaningful part of professional development and workplace stability, as highlighted in the following quote:

> *So, creating cultures that make it possible to implement [mentoring], not just so that the mentee has this as a focus, but also the other colleagues, that's important in general.* (Study IV, Focus group 4, NOR)

Transitioning towards a mentor identity

Interpreted through a transitional lens, nurse mentors demonstrated progression toward the *knowing* stage as described by Duchscher (2008). Through active engagement with the intervention, they began to critically reflect on their initial expectations, explore new understandings of their roles, and gradually move toward acceptance and integration of their identities as nurse mentors. This stage marks a shift away from task-oriented performance and toward deeper cognitive and emotional engagement with the role.

Furthermore, considering Dall'Alba's (2013) transition theory, the experiences of the nurse mentors can be said to have moved fluidly between *acting*, *knowing*, and *being* and ultimately evolved toward *becoming* nurse mentors through their continued involvement in the studies. Becoming a mentor was not simply a matter of acquiring new

responsibilities; it was a dynamic and transformative journey that involved integrating knowledge, skills, and identity in a way that fostered both personal growth and the capacity to support others during their professional development.

Discussion

In this chapter, the findings of the thesis are discussed in relation to relevant research and theoretical perspectives. The chapter begins with a discussion of the main findings, which is followed by a more detailed discussion. Finally, the chapter concludes with a discussion of the findings in relation to transition theory.

Main findings

Nurse mentors reported development in several areas during the intervention, noting that it strengthened their relationships with their mentees, enhanced their mentoring skills such as CTB and reflexive dialog, and provided greater clarity regarding their professional mentor roles. This development related not only to the nurse mentors and their mentees, however, as mentoring was also seen to contribute positively to the working environment. Notably, this occurred despite RNs in the target population reporting lower JS than reference values prior to the intervention. The findings highlighted several recurring themes both before and after the intervention, such as lack of time and insufficient leadership support, indicating persistent challenges throughout the study period. These results underscore the fact that organizational support is a fundamental prerequisite for effective mentoring.

The results of this thesis are confirmed by a scoping review conducted by Wisdom et al. (2025), investigating mentor perspectives across various health professions (physicians, residents, dentists, pharmacists, and nurses). The mentors in said study reported benefits from their roles, such as improvements in skills, knowledge, professional development, professional relationships, and confidence. They also identified challenges, such as time constraints and limited resources. Notably, Wisdom et al.'s (2025) review did not address the motivation, CTB, nor SE of mentors—aspects that are central to this thesis, and represent a novel contribution to the existing literature on mentoring in nursing.

The nurse mentors in this thesis' studies demonstrated potential to continue to improve in their roles and commitment, to their roles, their mentees, and their workplaces, but could not always engage with the mentoring process due to organizational barriers. They emphasized that mentoring should be embedded in everyday routines, findings that are confirmed by research by Eklund et al. (2024). They argued that NQNs

need more than transition programs in order to develop into their roles as RNs, and that supportive learning environments that are integrated with everyday clinical practice are essential for sustainable professional development.

Value-based care as a consistent competence

An interesting secondary result of Study I was that, across all levels of work experience, the participants rated themselves highest in the competence domain *Value-based nursing care,* which relates to respectful communication, patient autonomy, holistic care, and cultural sensitivity (Nilsson et al., 2018). This aligns with the findings of previous research (Al-Ali et al., 2025; Flodén et al., 2025; Gardulf et al., 2016; Malak et al., 2025; Serafin et al., 2022), suggesting that value-based care is a foundational element of the professional nursing identity across contexts. This result raises the question of whether such values are particularly emphasized during nursing education or become internalized early in practice due to the ethical core of the profession.

All groups rated their NPC "high" or "very high", i.e. over 75 (Theander et al., 2016), in all domains in Study I. Despite this, certain patterns were identified; both NQNs and long-term experienced RNs rated their competence lowest in *Documentation and administration of nursing care*, while the lowest scores reported by medium-term experienced RNs were for *Development, leadership, and organization of nursing care*. Previous studies have reported results that both contrast with (Al-Ali et al., 2025; Y. S. Choi & Kim, 2023) and confirm this (Flodén et al., 2025; Gardulf et al., 2016; Serafin et al., 2022). This could imply that these domains are underemphasized in nursing education, or undervalued in clinical practice. Alternatively, these domains might be perceived as peripheral to patient care, despite their recognized importance in broader healthcare systems.

Experience-related perspectives on practice

In Study I, the lowest-rated SE item among the Swedish participants, regardless of experience level, was "My studies have prepared me for my current position". This suggests a perceived gap between academic preparation and professional demands. The results presented in this thesis, both before and after the intervention, showed that the nurse mentors support NQNs with several competencies, such as ethical dilemmas, communication, and clinical skills. The findings also

demonstrate that nurse mentors adapt their approaches based on the individual needs, previous experience, and receptiveness to mentoring of their mentees. In line with these results, Prosen and Ličen (2023) highlighted that while both nursing education programs and healthcare organizations bear responsibility for preparing and supporting NQNs, NQNs themselves must take active responsibility for their professional development.

The long-term experienced RNs in Study I reported higher levels of SE and NPC than the medium-term experienced RNs and NQNs. These results confirm those of research by Högstedt et al. (2024), who showed that SE positively correlated with NPC. However, contrasting research by Prendi et al. (2024) found no such correlation. A recent Swedish study of RNs and midwives showed that longer experience was positively associated with higher competence in *Nursing care* and *Medical technical care*, and that SE was positively associated with high competence in all NPC domains (Flodén et al., 2025). An interpretation is that longer experience may foster a stronger sense of SE, which in turn enhances the self-perceived NPC of RNs across various domains of nursing practice. However, the conflicting findings in the literature suggest that the relationship between experience, SE, and NPC may be influenced by contextual factors such as workplace culture, support structures, and opportunities for professional development.

National reference values for JS in Sweden are 64.4 across all occupational groups, and 68 for RNs (Berthelsen et al., 2020; COPSOQ, 2025). The participants in Study I reported JS scores ranging from 51.0 to 59.1, suggesting that, at the time of the study, JS among participants was relatively low in comparison to national benchmarks. Furthermore, JS was lower among the medium-term experienced RNs than the NQNs in Study I, indicating that prospective nurse mentors reported lower levels of JS than their potential mentees. This underscores the importance of implementing proactive support strategies, not only during transitional phases but beyond in order to maintain JS over time.

The variations in JS between the experience groups in Study I may reflect the different expectations of the groups. While NQNs often experience a sense of progression, learning, and support in their early months, experienced RNs may face increased responsibility, workload pressures, and organizational demands that contribute to reduced JS. Willman et al. (2022) found that after 18 months in the profession, even though RNs were considered advanced beginners according to Benner

(1984), they were often the most experienced RNs in their respective units. They thus faced challenges and needed further development in key areas, including managing and organizing care for multiple complex patients and unfamiliar patient groups, as well as supervising NQNs and nursing students. The higher JS among NQNs may also reflect a "honeymoon phase", first described by Kramer (1975) and characterized by initial enthusiasm for and optimism due to joining the nursing profession. Another potential factor is the "Dunning-Kruger effect" (Dunning, 2011), wherein those with lower competence may overestimate their abilities due to limited insight. However, this explanation seems unlikely in this study, as the NQNs rated their NPC lower than more experienced groups, indicating a degree of self-awareness rather than overconfidence.

Development and leadership as a mentor

The participants in Study II were motivated by the idea of being role models, and mentoring contributed to their own professional growth. The nurse mentors in Studies III and IV also experienced personal and professional development through mentoring, and viewed it as a means of bringing about workplace stability and contributing to the future of nursing. Kakyo et al. (2025) explored the perspectives of mentors in acute hospital settings in Uganda, and found that motivations for engaging in mentoring varied; while some were driven to give back to the profession, others emphasized personal benefits. A study by Rossiter et al. (2024) on mentoring of RNs in Australia showed that mentors experienced a strong sense of fulfillment when observing the development of mentees and actively supporting their learning processes. Additionally, the mentors described personal and professional development, as well as renewed enthusiasm for their mentoring roles, confirming the results presented in this thesis.

The high SE and CTB of the nurse mentors who participated in Study III can also be connected to self-leadership, which has been found to have a connection with the meaningfulness of work, commitment given to work, along with JS (Kim & Kim, 2019). Self-leadership is taking responsibility for one's actions and applying self-management techniques, such as setting personal goals, monitoring behavior, and cultivating intrinsic rewards, in order to enhance motivation and overall well-being (Van Dorssen-Boog et al., 2020). A scoping review by Pursio et al. (2025) found that self-leadership in RNs increases with experience, improves

work performance, supports well-being, and is higher in healthier working environments. The nurse mentors in this thesis discussed self-leadership and using self-management strategies during the intervention, such as self-reflection and maintaining motivation and goals. A study by Giltenane et al. (2025) found that mentoring contributes positively to professional growth, JS, and career development for both nurse mentors and mentees. However, its effectiveness is often hindered by significant challenges, including time constraints, irregular work schedules, and insufficient managerial and organizational support, confirming the results of this thesis.

Mentoring as shaped by contextual and organizational factors

The findings of this thesis underscore the importance of context and organization to mentoring, which is not an isolated practice but embedded in relational, structural, and systemic factors within the working environment. Study II showed that mentoring creates safe spaces for NQNs, and fosters a learning environment within demanding, high-stress settings. The BePROF project was featured in *Omvårdnadsmagasinet* (magazine by the Swedish Society of Nursing), where Engelbrektson (2024) highlighted that the success of mentoring is dependent on how an organization actively integrates it into the workplace culture and emphasizing results of Studies III and IV. Additionally, the intervention was featured in Region Västerbotten's official communication channels (*NorBet, Arbets- Och Miljömedicin Norr*, 2024), where it was described as a systematic approach to enhancing competence and development that was contingent upon alignment with existing organizational routines and processes.

A recurring result of the studies presented in this thesis is the limited structural and leadership support available for nurse mentors, as a lack of clear routines, time allocation, and guidance risks undermining even the most highly motivated nurse mentors. Although the intervention was anchored in department leadership, and proposed that an agreement be signed between unit leaders, nurse mentors, and mentees, issues with lack of support and facilitation were still reported. These results confirmed research by Jangland et al. (2021), who reported that mentoring programs are often challenging to implement fully, even if they are well-designed. Also, Berndtsson et al. (2024) showed that, for mentoring to be successful, support for it is needed at the highest levels of an organization. And Nyholm et al. (2024) recommend that, for a

mentoring program in a hospital context to be successful, the hospital board needs to establish and prioritize a structured management system, including supportive leadership at the unit level.

One could argue that it is difficult for an organization to implement mentoring when it is struggling with lack of time, staff, and resources. However, given the costs of constantly employing and onboarding new RNs, mentoring can be seen as a strategic investment (Djiovanis, 2023). A scoping meta-review by Martina et al. (2025) confirmed the results of this thesis; for mentoring programs to be successful, organizational commitment, in terms of protected time and resources, is essential. Such programs show better outcomes, in terms of e.g., higher JS and retention, as well as better patient care. The authors also concluded that mentorship programs can be used as strategic investments and cost-reduction by organizations. Djiovanis (2023) concluded that mentoring programs result in significant net savings to organizations via increased retention, estimating that the cost of mentoring programs is one third that of the continuous recruitment and onboarding of new staff.

The findings presented in this thesis could be linked to the factors that are recognized by the *Magnet Recognition Program* (Tomey, 2009): organizational structure, participative and transparent leadership, JS, and professional development. Doleman et al. (2025) found in a scoping review of initiatives to create supportive practice environments, that mentoring was key in building a supportive environment that boosted retention and well-being for RNs. Other factors were ensuring adequate staff and resources, the presence and engagement of leaders and managers, and shared decision-making. Involving RNs in decision-making regarding not only mentoring but all aspects of healthcare has been shown to be beneficial for RNs, organizations, and patients (Kutney-Lee et al., 2016). However, we are not yet at that point. To quote Archibald-Varley and Fung (2024), Canadian RNs who run *The Gritty Nurses* podcast:

> *Nurses are the largest workforce in healthcare, but have the smallest say in how healthcare is run.* (p. 194)

Becoming a mentor: Integrating role, identity, and practice

The progression of the nurse mentors who participated in the research presented in this thesis, from the initial role adjustment to deeper

identity integration, reflects a meaningful professional transformation. Interpreted through the lens of Duchscher's (2008) transition theory, this shift from *doing* to *knowing* suggests that mentoring is not a static role, but a developmental process that requires time, reflection, and support. The intervention appeared to facilitate this movement by creating space for the nurse mentors to critically engage with their expectations and experiences. This aligns with Dall'Alba's (2013) theory of *becoming*, wherein professional growth involves not only acquiring competencies, but building a professional identity. The journey of the nurse mentors illustrates how structured support can foster a shift from task-orientation to a more integrated sense of mentoring. This has implications for how mentoring programs are designed, highlighting the importance of reflective practice, peer dialog, and support as central components of the development of nurse mentors.

Methodological considerations

In this chapter, methodological considerations regarding the studies presented in this thesis are discussed. The studies used quantitative, qualitative, and mixed-method study designs, prompting various methodological considerations. Continuous reflection with co-researchers (researchers with backgrounds as RNs from different research fields and specialties, as well as a statistician and public-health researcher) has been a "red thread" throughout the thesis work. Reflexivity was practiced continuously, establishing the strength and robustness of the studies. Malterud (2001) argues that being aware of one's background, assumptions, and influence on data interpretation is essential for maintaining analytical openness. As an experienced RN, it was important for me to focus on the voices of the nurse mentors. My professional experience and preunderstanding were not primarily regarded as limitations, but rather strengths that enabled me to recognize and interpret the experiences of the nurse mentors. Throughout the studies, the goal was to include participants who were representative of the population but diverse in terms of age, gender, experience, and background, in order to strengthen the quality of the studies and relevance of the results (Graneheim et al., 2017; Polit & Beck, 2010). A key strength of the studies is that they were conducted in a multicenter context with two countries and counties, in various settings including hospital care and municipal care.

In the quantitative research, methodological rigor was established through careful consideration of validity, reliability, and generalizability (Polit & Beck, 2010). Validity and reliability were addressed using consistent and validated instruments, ensuring that repeated measurements produced similar results (Polit & Beck, 2010). The instruments were carefully selected based on the aims of the studies and whether they were well-established in other contexts, thereby allowing comparison of results between studies. Variables such as NPC, SE, JS, and CTB were selected based on their associations with mentoring and well-being at work, as presented in the background of this thesis. The NPC-SF was used since it assesses specific competencies related to the nursing profession and has undergone cross-cultural adaptation and validation in various countries, making it suitable for use in different national and international healthcare contexts (Nilsson et al., 2018). The Occupational Self-Efficacy Scale (OSS-SF) was used in Sweden since it is specifically designed to assess SE in an occupational context, focusing on

an individual's belief in their ability to handle job-related tasks and challenges (Rigotti et al., 2008). The COPSOQ III was used since it is designed not only for identifying problems but for broader organizational development, and thus can provide an understanding of well-being at work. By using standardized core items, the instrument allows for comparison between different groups over time (Berthelsen et al., 2018). The CTBI-23 was used since it is unique in allowing for self-rating of CTB by nurse mentors, instead of by their mentees. The instrument supports the development of effective teaching strategies, creates supportive learning environments, and enhances the socialization and professional development (Lee-Hsieh et al., 2016).

Generalizability was considered in terms of sampling strategies and the representativeness of the study population (Polit & Beck, 2010). In Study I, the response rate was approximately 29%. A formal power analysis prior to the study was not performed, since the aim was to include the entire population of RNs available within the defined setting and timeframe of the study. The goal was to maximize participation and gather data from as many RNs as possible, rather than estimate based on a predefined sample size, as in purposive sampling (Wang & Cheng, 2020). While the low response rate may have affected generalizability, the inclusion strategy was comprehensive and aimed at minimizing selection bias. Additionally, in Norway, the survey was distributed via the member registry of the Norwegian Nurses' Organization; thus, some of the RNs invited may not have been part of the targeted population, as they may been retired RNs, nursing students, etc., and still have been in the register. Such individuals were instructed not to answer the survey, and must be considered when estimating the response rate.

The choice to use surveys as a data-collection method in Study I was made on the basis that cross-sectional surveys are especially suitable for large populations, for estimating prevalence, and for describing associations at a specific point in time (Wang & Cheng, 2020). Self-reporting bias was considered; the responses may have been influenced by recall errors or social and cultural factors. Additionally, the design and administration of the questionnaire itself may have contributed to bias. Elements such as vague or leading questions, questionnaire length, and the familiarity of respondents with the format could all have affected the reliability of the data collected (B. C. Choi & Pak, 2004). A notable strength of the studies is the exclusive use of established and validated instruments for data collection.

Initially, the data from Sweden and Norway collected during Study I were analyzed separately. Missing data were excluded listwise and outliers were not removed, as they were deemed to reflect natural variability within the population. The use of robust non-parametric methods for skewed data helped to mitigate the influence of extreme values (Aguinis et al., 2013). However, given the strong similarity in scoring from both countries, the datasets were merged to form a single, larger sample for analyzing JS and NPC. This decision was made in order to strengthen the analysis of the overall population (Han & Si, 2025). SE data remained separate due to the use of different scales: the OSS-SF in Sweden, and the SE dimension of the COPSOQ III in Norway. At the time of the studies, the OSS-SF had not yet been validated in Norwegian, which informed the decision to use the SE domain from the COPSOQ III for the Norwegian sample. The use of different instruments limits the direct comparability of the SE scores between countries. However, within-country analyses remain methodologically sound, and certain patterns in country-specific data can be observed, including a tendency toward high scores in Sweden and not high scores in Norway. Such findings suggest that contextual factors may influence how nurse mentors perceive and develop their professional SE, which could prompt further investigation.

The qualitative data of Study II were collected through individual interviews, enabling a deeper exploration of the personal experiences of the participants, and nuanced insights to be gained in a confidential setting (Brinkmann & Kvale, 2018). I did not conduct the interviews myself, but was responsible for analyzing the transcribed interview data. While this may be considered a limitation, as I did not have direct access to body language and the contextual nuances of the interview situations, it is also a strength. Analyzing the material with fresh eyes, without preconceived impressions from the interviews, allowed for new perspectives and interpretations (Beck, 2019). To further strengthen the trustworthiness of the analysis, I maintained close collaboration with the co-researchers, and we reflected on the results together.

Although the interview guide used in Study II was inspired by transition theory (Dall'Alba, 2013; Duchscher, 2008, 2009), the analysis itself followed an inductive approach, where patterns and themes were interpreted based on the data, rather than being predetermined by theory (Graneheim et al., 2017). Thus, while the theory helped to shape the focus of the interview questions and ensure their relevance to known challenges in professional transition, it did not constrain nor predetermine the interpretation of the data. Instead, the analysis was

guided by the participants' own narratives and experiences. This approach ensured openness to unexpected insights. Later, during the writing of this thesis, the findings were interpreted through the lens of transition theory, thereby synthesizing the empirical results with theoretical perspectives.

A methodological limitation is participant attrition over time, the dropout rate for the intervention was notable. This reduction in sample size may have impacted the strength of the findings (Polit & Beck, 2010). External factors, including the COVID-19 pandemic, likely contributed to reduced participation and engagement during the study period. Despite these challenges, a key strength is that the studies were successfully conducted within healthcare units during a time of considerable disruption.

Surveys were chosen for the purpose of data collection in Study III as they allow pre- and post-data to be compared, making them particularly suited to assessing interventions in clinical settings (Stratton, 2019). A limitation of Study III is the absence of a control group, which makes it difficult to attribute the observed changes specifically to the intervention (Stratton, 2019). However, a major strength is the mixed-method approach, which enriched the quantitative findings with qualitative insights, thereby enhancing the robustness of the results and strengthening their connection to the intervention (Creswell & Plano Clark, 2011). The Norwegian participants showed a dip in CTB from baseline to post-test I, followed by a rise at post-test II, suggesting contextual influences on mentoring and CTB. Yet, qualitative data showed shared experiences and needs among the nurse mentors in Sweden and Norway, pointing to common professional realities beyond national differences. This underscores the value of mixed methods in capturing both measurable changes and the nuanced dynamics of mentoring.

The focus group interviews used in Studies III and IV encouraged discussion and interaction among the nurse mentors, which led to shared understandings and contrasting opinions that enriched the data (Krueger, 2014). One limitation of the studies was that the intended number of participants for the focus groups was not achieved, which may have influenced the breadth of perspectives and potential for data saturation regarding the experience of being a nurse mentor. However, the studies employed qualitative content analysis in accordance with Graneheim et al. (2017), a methodological approach that emphasizes the importance of variation in content, rather than a predetermined number

of interviews or the concept of saturation. From this perspective, the sufficiency of the data is determined by its richness and ability to capture diverse experiences. In the studies presented in this thesis, the data were considered sufficiently rich to support meaningful analysis and interpretation. One of the planned focus group interviews became an individual interview due to the last-minute cancellation of other participating nurse mentors. This individual interview was included in the data based on the argument made by Lambert and Loiselle (2008), that individual interviews can complement focus group data and enhance the depth of qualitative insights.

The research presented in this thesis employed qualitative content analysis, as described by Graneheim and Lundman (2004), in all qualitative studies. This was a deliberate methodological choice made to deepen my understanding of and proficiency with the method, and for its suitability to systematically identify both recurring themes and variations in the experiences of participants through structured coding, abstraction, and interpretation. Trustworthiness was established by considering credibility, dependability, confirmability, and transferability (Graneheim et al., 2017; Lincoln et al., 1985).

To support credibility, interpretations were consistently grounded in the participants' own expressions, as well as in a systematic process of condensation, coding, abstraction, and interpretation of the data. The use of a structured interview guide during the collection of qualitative data enhanced dependability by ensuring that the same areas were explored in all interviews in a study. Dependability was further strengthened through collaborative analysis and reflective discussions with co-researchers (Graneheim et al., 2017). Confirmability was supported by detailed documentation of the research process, the use of reflexivity, and triangulation with project colleagues, thereby ensuring that the findings reflect the voices of the participants rather than the researchers (Lincoln et al., 1985). Credibility and authenticity were also reinforced by providing examples of the analytical process, including steps of abstraction and interpretation, and by incorporating direct quotations from the participants (Graneheim et al., 2017). Transferability was addressed by providing rich descriptions of the study context, participants, and data collection methods, enabling readers to assess the applicability of the findings to other settings (Polit & Beck, 2021). Given the international context of this thesis, transferability to other settings is encouraged, while acknowledging that contextual differences may influence interpretation and application.

Conclusions

The results of the research presented in this thesis show that being and becoming a nurse mentor is a relational, reflective, and developmental process that fosters professional identity and contributes to a positive workplace culture. When embedded into daily clinical practice, mentoring could support transition, enhance retention, and promote lifelong learning. This research provides new knowledge of mentoring; that is more than a support strategy for NQNs. Mentoring can strengthen leadership, communication, reflective skills, and a sense of purpose and belonging in nurse mentors. The results show that for mentoring to be sustainable and impactful, it needs to be integrated into daily practice and supported by unit leaders through structured processes and routines, and ongoing guidance.

Clinical and policy implications

The results of this thesis underscore the importance of structured and well-supported mentoring in clinical settings. Mentoring should not be viewed as an optional nor informal activity, but as a core organizational function that contributes directly to the sustainability and quality of the nursing workforce. Prioritizing mentoring signals a commitment to relational leadership and learning culture, where development is not only encouraged but structurally supported. This requires organizational alignment, including clear policies around mentoring roles; integration of mentoring into strategic planning in operational plans; resource allocation (e.g., time, training, recognition); and leadership engagement. By embedding mentoring into clinical practice, healthcare organizations can build a sustainable workforce capable of adapting to future challenges and providing safe patient care.

Such support should be structural, cultural, and strategic. This includes allocated time for nurse mentors for sessions with their mentees, as well as for planning, reflection, and follow-up. The role of the nurse mentor needs to be formally defined in employment contracts and job descriptions to ensure clarity and recognition. Additionally, regular coordination between nurse mentors and unit leaders to align goals and expectations is essential. To foster peer support and shared learning, nurse mentors can participate in scheduled meetings with fellow nurse mentors. Their contributions to mentoring should be regularly

acknowledged through performance reviews, feedback mechanisms, and opportunities for professional development.

Educational implications

One finding from this thesis was that the lowest-rated item in occupational SE was: “My studies have prepared me for my current position.” This highlights a need for nursing education programs to place greater emphasis on transition preparedness, including communication skills, prioritization, and the ability to navigate complex clinical environments. Moreover, nursing programs should foster reflective practice, collaborative learning, and leadership from the outset. However, the responsibility is not solely on nursing education. Healthcare organizations must also actively support NQNs, particularly during clinical placements as nursing students and the early stages of their careers. Embedding mentorship as a core professional value can help bridge the gap between education and clinical practice, reduce transition shock, and promote a culture of support and continuous professional development.

Future research

Building on the findings of this thesis, future research should examine the long-term implementation and sustainability of mentoring in nursing. Longitudinal studies conducted over several years could provide valuable insights into whether the initial benefits of mentoring are sustained over time. The thesis’ results offer a foundation for further development of a structured mentoring framework. Future investigations should explore how such frameworks influence JS, retention, and professional development, as well as how organizational culture and leadership affect their implementation and nurse mentors’ SE. Moreover, interprofessional mentoring across disciplines can be explored, particularly regarding its potential to enhance collaborative practice. Lastly, future studies should assess the economic implications of implementing mentoring frameworks, evaluating their potential to deliver both clinical improvements and economic value that could encourage healthcare organizations to invest in their sustained implementation.

Sustainability

This thesis can be linked to the sustainable development goals (SDGs) of the United Nations (UN) (2015), established with the purpose of securing the rights and well-being of everyone on a healthy, thriving planet. There are 17 SDGs, and this thesis can be linked to six of them. In presenting the findings of this research, my hope is to contribute to making mentoring a permanently implemented part of nursing, leading to increased competence development and a more sustainable and healthy working environment for RNs in which they can provide safe patient care.

A sustainable working environment will result in highly qualified RNs, which in turn contributes to increased population health, in line with *SDG3: Ensure healthy lives and promote well-being for all at all ages*.

Mentoring and a supportive working environment will also contribute to increased competence development for RNs, in line with *SDG4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*.

RNs are predominately women, and this research can help strengthen the working environment for women, in line with *SDG5: Achieve gender equality and empower all women and girls*.

A more sustainable working environment for RNs will also lead to the promotion of *SDG8: Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all*.

In the long run, this research can lead to a more sustainable healthcare infrastructure, in line with *SDG9: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation*.

A more stable workforce of RNs could contribute to stability and equality in access to healthcare in the population, in line with *SDG10: Reduce inequality within and among countries*.

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