The experiences of doctorally prepared nurses and doctoral nursing students with being mentored in the Nurse-Lead programme: A focus group study

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ARTICLE INFO

ABSTRACT

Aim: to explore experiences of being mentored and the contribution of the mentoring to leadership and professional development of doctorally prepared nurses and doctoral nursing students participating in the Nurse-Lead programme.

Background: Mentoring is considered important for career development of academic nurses. Doctorally prepared nurses need a wide range of professional competences to develop sustainable careers. Therefore, they may benefit from a larger network of mentors, outside their own organization, to support their professional development. Therefore, a web-based leadership and mentoring programme was developed - the Nurse Lead programme.

Design: A descriptive study with semi-structured focus groups.

Method: Three focus groups were conducted during an on-site programme meeting in 2019 with twenty-one doctorally prepared nurses and doctoral nursing students. The interview guide included questions about mentoring relationships and meaning of mentoring for leadership and professional development. The interviews were thematically analysed.

Results: Five themes were identified: "Preferred characteristics of mentors", "Developing trusting relationships", "Engagement of the mentors", "Becoming a proficient researcher and team leader" and "Becoming an empowered and confident professional".

Conclusion: Mentoring supported the leadership and professional development of doctorally prepared nurses and doctoral nursing students. Participants were engaged in rewarding mentoring trajectories. The results indicate that a similar approach could be followed when developing mentoring programmes in the future.

1. Introduction

Doctorally prepared nurses (DPN) have the potential to become the academic leaders of the nursing discipline. A strong and well-established doctorally prepared nursing workforce is imperative to ensure the empirical foundation for nursing, as DPN are experts in conducting

research and implementing research findings into clinical practice and educational programmes (AACN, 2016; Dreifuerst et al., 2016; McNett et al., 2021). Due to their complex roles in research, clinical practice, education and administration, nurses, who have obtained a PhD degree, need to develop leadership in the areas of research, patient care and workforce development (AACN, 2016). According to Northouse (2019) leadership is a process whereby an individual influences a group of people to achieve a common goal. To practice leadership, DPN need to develop diverse competences across the full spectrum of research, including the development of advocacy skills and the courage to seek innovative solutions for challenges in healthcare (Broome, 2015). It is expected that DPN develop basic leadership skills during doctoral education, but many doctoral nursing students (DNS) do not have the opportunity to develop leadership competences. DNS are often not exposed to leadership theory and opportunities to develop leadership competences, because, for instance, they often work solo (Broome, 2015).

Challenges related to the professional and career development of DPN include limited career opportunities and limited availability of suitable positions (Chavez et al., 2021; de Lange et al., 2019; McKenna, 2020), high workloads, difficulties with balancing work and private life and high administrative and/or teaching demands (Al-Nawafleh et al., 2013; Chavez et al., 2021; de Lange et al., 2019; Matthews et al., 2021; Orton et al., 2019). DPN describe a lack of clear policies regarding research commitments and a lack of protected time for research (Al-Nawafleh et al., 2013; Orton et al., 2019). It is expected that DNS may experience similar challenges on top of having to deal with stressors related to their doctoral studies, such as relationships with supervisors, publication pressures and financial issues (Dreifuerst et al., 2016; Volkert et al., 2018).

Mentoring is defined as a relationship between a more experienced mentor and a less experienced mentee for the purpose of supporting the mentee's career (Ragins and Kram, 2007). Mentoring has various forms: formal mentoring, where mentors are assigned to mentees; informal mentoring, based on social attraction between the mentee and mentor; peer mentoring and group mentoring, where multiple mentors support the mentee (Broome et al., 2021; Busby et al., 2022; Ragins and Kram, 2007). Mentoring of DPN was found to be beneficial for their career, leadership, academic and professional development (Busby et al., 2022; Hafsteinsdóttir et al., 2017; Jacelon et al., 2003; Nersesian et al., 2019). Mentoring supported DPN working in academia by helping them to remain research-active, contributing to their research productivity and enabling them to make career decisions and handle academic politics (de Lange et al., 2019; Hafsteinsdóttir et al., 2017; Heinrich, 2005; Webber et al., 2020). DNS who had mentors and advisors during doctoral education were more likely to report higher levels of career readiness and smoother transitions into academic careers (Nersesian et al., 2019).

Despite the benefits of mentoring in academic nursing and the tradition of mentoring amongst academic nurses in countries like the United States, there seems to be a limited number of studies reporting on mentoring programmes in other countries (Cullen et al., 2017; Hafsteinsdóttir et al., 2017; Nowell et al., 2017). Nowadays, DPN need a wide range of professional competences to develop sustainable careers (Numminen et al., 2019) and therefore may need to connect with a larger network of mentors, outside their own organizations, to support their professional development (Broome et al., 2021). To respond to this, nurse leaders in Europe joined forces and established a web-based leadership and mentoring programme for DPN and DNS, the Nursing Leadership Educational Programme (Nurse-Lead) (van Dongen et al., 2020). The aim of this study was to explore the experiences of DPN and DNS with being mentored in the Nurse-Lead programme and the contribution of the mentoring to their leadership and professional development.

2. The Nurse-lead programme

The two-year Nurse-Lead programme several components: a) two distinct online courses with seven (DNS) to ten (DPN) online modules; b) individual leadership development plans with personal development goals based on a 360° leadership assessment; c) individual mentoring trajectories; d) meet-the-expert sessions with leading professors and experts in nursing science; and e) attending two Nurse-Lead seminars. The Nurse-Lead programme was developed based on an earlier leadership and mentoring programme for DPN (Hafsteinsdóttir et al., 2020) and a literature review on required competences for DPN working in research (Numminen et al., 2019). The DNS had fewer course modules than the DPN as some content areas were not as relevant for the DNS and this was also to minimize the time investment for the DNS as they were required to take part in other learning activities as well. A programme coordinator, experienced in the development and coordination of a national leadership and mentoring programme, chaired the programme. A moderator chaired the online modules and provided information, monitored progress, stimulated interaction and assisted the participants in case of questions or problems. The intended programme outcomes included enhancement of leadership skills, strengthening of professional development, research programme development and the establishment of transnational networks (van Dongen et al., 2020).

2.1. Mentoring in the Nurse-Lead programme

Each participant identified a mentor using several criteria: the mentor was preferably: a) a leading international expert in nursing science; b) an expert in the mentees' area of research; c) someone who demonstrated his/her ability to mentor and d) from another country than the mentee. Mentors committed to a one-and-half year mentorship and to meet bi-monthly with the mentee. Together the mentor and mentee decided on the manner of communication, e.g., face-to-face, telephone or online meetings. Mentors did not receive any training or payment.

Mentoring was organized according to individual mentoring trajectories. At the start of the programme, the Nurse-Lead participants set up individual professional development plans based on 360° leadership assessment. The professional development plan described main areas for improvement, including goals and actions for the mentee to work on. The professional development plan was used to guide mentoring conversations and to track the mentees' progress. At the end of the programme, participants evaluated their progress as well as their experiences with mentoring. No mentoring relationships were established between the DPN and DNS within the programme.

3. Design

In this descriptive study, focus group interviews were used to explore the experiences of DPN and DNS with being mentored in the Nurse-Lead programme (Sandelowski, 2000). The focus group interviews were conducted with DPN and DNS from Finland, Germany, Iceland, the Netherlands and Portugal, during an on-site programme meeting in the Netherlands in September 2019. The focus group interviews were conducted face-to-face to facilitate interaction among the participants so as to collect rich data (Polit and Beck, 2017).

4. Methods

4.1. Population and setting

The total study population included 41 DPN and DNS participating in the Nurse-Lead programme. The convenience sample for this study included 21 Nurse-Lead participants, who attended the programme meeting and agreed to participate in the study. DPN and DNS were eligible to apply for participation in the Nurse-Lead programme if they:

a) had a PhD degree in nursing (science) (DPN) or were doctoral students in nursing (science)(DNS); b) were working in research; and c) worked at a University, University of Applied Science (UAS), University Medical Health Center (UMC), general hospital or health care organization connected to the Nurse-Lead project. There were no criteria regarding which stage of their career or doctoral studies the participant was in. Despite the difference in career stage between the DPN and DNS, both groups were included in the study as they both developed mentoring trajectories based on similar programme guidelines.

4.2. Data collection

Three focus group interviews were conducted in September 2019, one year into the programme. Prior to the focus group interviews, one author (LD) developed an interview guide with topics based on earlier studies (Hafsteinsdóttir et al., 2017; Nick et al., 2012), which was refined based on discussions with the research team. Focus groups started with the question: "Could you share your experiences with being a mentee in the Nurse-Lead programme so far?" Next, the following topics were discussed: the establishing of a mentoring relationship, content of mentoring conversations, the roles of the mentor and mentee and the meaning of mentoring for leadership and professional development.

The focus groups were moderated by experienced nurse scientists (HJ, HLK, NF) who encouraged open discussions among participants and used probing questions to gain in-depth descriptions and explanations. Other researchers made notes on main discussions, group interactions and the context (THB, GM, AH, SF, LD). Some researchers and participants worked in the same institution, in these cases special efforts were made to assign them to different focus groups. The focus group interviews were conducted in a conference room with only the researchers and participants present. All interviews were conducted in English and audio-recorded.

4.3. Data analysis

The audiotapes were transcribed verbatim (LD). Traceable information was coded to protect the participants' privacy. The transcripts were analysed using Braun and Clarke's (2006) six phases of thematic analysis. In this inductive approach the first step was to familiarise oneself with the data by (re)reading the transcripts to identity initial patterns across the data. Relevant items in relation to the study objective were coded (LD). Then initial themes were established by merging codes which were linked and were relevant to the study aim (LD). Themes were refined by constant comparison, which means that the researcher moved back and forth between the transcripts and the analysis (LD). Themes were critically reviewed and related back to the transcripts and the aim of the study by three researchers (TBH, HJ, HLK). Quotations of participants were carefully selected to respond to the theme. The research team met on a regular basis to reflect on the data and discuss the analysis. The research team determined that the data were highly relevant to the study aim, that it included variation in mentoring experiences provided by a specific group of participants and that it was collected based on high quality dialogue between the researchers and the participants (Malterud et al., 2016). No member checks were conducted. The authors agreed on the themes, interpretation and presentation in the final manuscript. Nvivo 11 was used to manage and store the data *(ORS international, Victoria, Australia)*.

4.4. Ethical considerations

Permission for this study was obtained from an Ethical Review Board (19−004). Participants who indicated willingness to participate received an information letter and an informed consent form, which was signed by both the participant and researcher. During the interviews, the participants had the right to withdraw from the study at any time. Participation in the Nurse-Lead programme is publicly known, due to messages on organizational and programme webpages and social media platforms and so, to prevent traceability in the study's publication, the characteristics of participants in the study were not presented at the individual level and quotes were not linked to individuals. The data were kept secure and could only be accessed by two of the authors (LD, TBH).

5. Findings

In total 41 DPN and DNS took part in the Nurse-Lead programme at the time of the study and 21 of them were included in this study. Thirteen were DPN and eight were DNS. Nineteen of the participants were women and the sample had a mean age of 41 years (range 28-54). Seven participants were from Portugal (33.3 %), six from Finland (28.6 %), four from the Netherlands (19 %), two from Germany (9.5 %) and two from Iceland (9.5 %). Most participants worked at universities (61.9 %). All participants worked in research and most combined this with positions in education. Each of the focus groups included seven participants with a mixture of DPN and DNS. The average time of the focus groups was 60 min (range 54–62 min).

5.1. Themes

Five themes were identified, with three themes describing the development of the mentoring trajectories and mentoring experiences, whereas two themes described the meaning of mentoring for the participants' leadership and professional development. Some of the themes were connected with the topics in the interview guide. However, the open approach used in the focus groups and analysis allowed new topics to emerge alongside in-depth insights in relation to the predetermined topics.

5.2. Developing mentoring trajectories

5.2.1. Preferred characteristics of mentors

Similarities were observed in considerations towards choosing a mentor. The participants valued internationally leading nurse scientists, who had experience with managing large international research projects and were widely recognized as leaders in the nursing science community.

I wanted to have an international mentor, someone from another country. I thought it would be beneficial to choose someone who works in the same area. During the process I saw that I wanted a woman with strong leadership competences, in a leading position (DPN).

Many participants highlighted the importance of trust and personal connections, and for this reason, some chose mentors they already knew. In some cases, DNS chose a supervisor as a mentor based on familiarity with their PhD studies and the Nurse-Lead programme:

It is important for me that this person is an expert but also a good person. I did not want to contact somebody I had never met before. This person I have met and thought she was a wonderful person. I'm able to trust this person (DPN).

Although research expertise was highly important in the beginning, when the mentoring trajectories evolved, participants experienced mentoring focused more on their own professional development than on research:

During the mentoring conversations we discussed my career and where I would like to go with my research career as well as how to develop my research skills, teaching and supervising. [Originally,] I wanted her to be a

researcher in my field – but eventually, it did actually not have a big role in our conversations (DPN).

For some participants the research topic remained important as they made agreements about future research collaborations. Four participants made concrete plans for collaborations and some were still exploring such opportunities. Some already explored potential collaborations at the start of the programme, while the opportunity arose over time for others:

My mentor and I are developing a questionnaire and now we will translate it in my language. Although this is work, it is wonderful that you can be inspired by that (DPN).

5.3. Developing trusting relationships

Participants described how mentoring relationships were established and how they progressed. Approaching a potential mentor was exciting and difficult at the same time, especially when it was someone they had not met before when it was a highly respected professional with a busy schedule:

I found it very hard to choose a mentor. Not because I did not know who I wanted to be my mentor, but everyone had such a busy schedule, and I don't want to be intrusive. I did not feel comfortable asking her for her time. Before asking her, in my thoughts, I already filled in that she did not have time to mentor me (DPN).

Although some participants were concerned that a potential mentor would not be able to serve as a mentor, all participants described their mentors as enthusiastic, committed and genuinely interested from the moment they contacted them:

I have the experience that it is difficult to ask someone to be your mentor. But when I had decided who I wanted to be my mentor, I felt good about asking her face-to-face and she was so nice. It was unnecessary for me to be afraid of asking (DPN).

Trusting relationships were built over time. During the first meeting the focus was on getting to know each other, discussing expectations, mentoring goals and agreeing on certain practical aspects. Some relationships started stiff, but over time most participants felt that their relationship evolved into a trusting relationship where they were felt free to discuss personal matters:

I feel very secure when I talk with my mentor. I'm comfortable with the questions he asked, even when they go very deep. Sometimes after these mentoring sessions things go around in my head a while and I reflect about what we have discussed and what it meant (DPN).

Some relationships even evolved further, as reciprocal relationships developed and participants felt comfortable enough to give back to their mentor. In some cases, participants and their mentor agreed on continuing mentoring after the end of Nurse-Lead programme because of the successful experience:

Mentoring is really fantastic and now my mentor actually comes and asked me for advice. I really had the feeling that she would like to hear me and my opinion. This shows how good the mentoring was working and the trust there was. She could have asked someone else for advice, but she did not – she asked me. I felt very privileged (DPN).

I have developed a strong connection with my mentor. I really hope to continue with mentoring after the Nurse-Lead programme. We have already made plans about this (DPN).

One participant felt uncomfortable with sharing personal matters,

which might have been due to the difference in hierarchical positions and work experience:

We are mostly talking about how she did things [research] during her career. I use her as a role model, but we are not really disusing in-depth what my problems and struggles are because I do not feel comfortable to discuss everything with her –but still I can learn from her experiences in research (DNS).

5.4. Engagement of the mentors

Personal characteristics of mentors had a large impact on the development of the mentorship. The mentors were reported as being friendly, engaged and committed, but also confronting in a supportive way:

My mentor is really supporting. Sometimes I do complain that it is hard to do this and that. Then he [mentor] asks 'What can you do to keep going?' He is confronting. Confronting in a really nice way. He makes a genuine effort to keep me going (DPN).

The participants valued mentors who asked critical questions to gain new insights. New, reciprocal, insights were created by the mentee asking questions to their mentors, stimulating open conversations leading to deep and trusting relationships:

My mentor provides a mirror to reflect on situations and struggles I experience and she [mentor] doesn't take easy answers. Well, it helps me to gain insight into what I want to achieve and I asked her for choices she has made and what she learned from them (DNS).

Furthermore, availability of the mentor was important as mentors had busy schedules, on which the participants did not want to intrude, making it important to plan meetings in advance:

Lately I thought, it was a really busy period. At such moments, I do not think about contacting her[the mentor]. Exactly at these moments you can use them [mentoring conversation] as they ease you down. I am glad that we had a schedule, then I won't forget them (DPN).

5.5. Meaning of mentoring for leadership and professional development

5.5.1. Becoming a proficient researcher and team leader

Mentoring supported the development of participants' research as they learned about managing their research projects. Mentoring helped them develop new ideas in their research and to make ideas explicit. It also enabled participants to continuously make progress with their research even when obstacles were encountered:

Sometimes it is nice to have someone who you can speak to about the project and think about a way to manage it all. We have to make choices and it is good to have someone experienced, who was in the same path before. This is a good method to set strategies and overcome obstacles (DPN).

Participants also reported that mentoring supported their team working competences. They became more aware of the importance of listening to others, rewarding the contributions of others and motivating others to develop themselves. The mentors stimulated the participants to reflect on their role in their research (programme), research teams and encouraged them to take on new roles:

My mentor would listen to me and I would learn with her to listen to others. She encouraged me and I learned to encourage others as well. She motivated me and I learned to motivate others as well. Also, she is my role model and in this way, I will inspire others to do the same (DNS).

5.6. Becoming an empowered and confident professional

All participants experienced progress in their leadership and professional competences:

When I finished my PhD studies there was the next phase in my career to focus on. Then I met this person [mentor] who helped me. It was a difficult moment in my career. I felt so frail and while wanting to become an academic. This [mentoring] has been very helpful (DPN).

Participants described becoming more confident and empowered, as the conversations and reflections with their mentors encouraged and facilitated them to explore their professional development and career ambitions. This resulted in increased awareness and new insights. Participants felt empowered to work on their professional development after mentoring sessions. They grew in their self-confidence, as they described learning to listen to their inner voice. Along with this, emotional support provided by the mentor strengthened the mentee's self-confidence. The participants reported that they had stronger belief in themselves and that, as a result, they dared to take well thought out risks and step out of their comfort zone while conducting and managing their research. The support provided by the mentor made them feel more at ease with themselves and more relaxed, as they were reassured that they were doing good things:

Mentoring feels good while it also is intimidating as I'm challenging myself to find my way and constantly going out of my comfort zone. She [mentor] understood why this is important and she pushed me forward (DPN).

Some participants were inspired to empower other colleagues, and some became mentors themselves, to support others:

Every time I'm giving a class, I think about my leadership behavior. Doing this, I will inspire my students to show this behavior as well. When I work with my colleagues at the hospital, I really listen to what they say and I try to be a role model to them and they will be the same (DNS).

6. Discussion

This study used focus groups to explore the mentoring experiences of DPN and DNS and how mentoring, as a part of a web-based leadership and mentoring programme, contributed to their leadership and professional development. The results showed that the participants and the mentors developed trusting relationships. Mentoring supported participants in their leadership and professional development: they gained new insights into their own research, increased self-awareness and improved their confidence to take the next steps in their leadership and professional development. They experienced becoming proficient researchers and leaders as well as empowered and confident professionals. These findings contribute to the existing literature by providing an understanding of how DPN and DNS experience mentoring and how this mentoring contributes to their leadership and professional development.

This is the first study investigating a web-based mentoring programme for DPN and only a limited number of studies were conducted on these types of programmes for DNS. Clement and Welch (2021) explored the lived experiences of DNS participating in a virtual mentoring programme taking place through online communication (Welch, 2017). Although the Nurse-Lead programme was web-based, the participants could establish face-to-face mentoring, virtual mentoring, or a combination of both. However, most participants used virtual mentoring since most mentors were in different countries. Findings of Clement and Welch (2021) are in line with our findings; both studies identified positive experiences with mentoring especially with building relationships and participants feeling comfortable with sharing their stories. Both studies also underline the importance of practical things like scheduling

meetings in advance, staying in touch in demanding times and the importance of an engaged mentee who takes initiative for the mentoring. Clement and Welch (2021) only included DNS while our programme also included DPN. In this study, both DPN and DNS reported positive mentoring experiences, therefore it could be argued that mentoring, as a part of a web-based programme, could fit the needs of both DPN and DNS. To develop a successful career in research and other fields, DNS and DPN need to develop a wide range of competences (Broome and Fairman, 2018; Numminen et al., 2019). In addition, it is known that mentoring needs from novice DPN are different from those in mid- or late- career stages (Broome et al., 2021). Given the difference in career trajectories, career stages and levels of professional and research competences, individual DNS and DPN are expected to have unique mentoring needs (Broome et al., 2021). This also requires mentors to have specific characteristics and experiences beyond the traditional experiences of a researcher and scholar. The mentoring needs of the mentee should be paired with the competences, experiences and knowledge of a mentor, which may result in approaching mentors from different institutions, fields, or regions (Broome et al., 2021). In the Nurse-Lead program, mentoring through an individualized approach was facilitated by the creation of a leadership development plan to make explicit the participants' mentoring needs and participants were encouraged to approach mentors who could support them in reaching their individual goals.

Reflecting on the development of the mentoring relationships, we found that some DNS approached their PhD supervisor to be their mentors. Reasons for this were familiarity on a personal level and with their research work. These DNS may not have felt confident enough to ask senior experts from abroad. This may indicate that preferences in a mentor may differ between DPN and DNS. Earlier studies were not able to distinguish the best method for matching mentors and mentees (Eby et al., 2010; Nick et al., 2012). The participants in this study were able to identify suitable mentors themselves based on their individual needs, familiarity with the nursing science community and research field. This is important since mentees need to take initiative for themselves and not depend on others (Numminen et al., 2019).

The literature reports limited availability of mentors as a barrier towards mentoring (Hafsteinsdóttir et al., 2017; Sawatzky and Enns, 2009; Swanson et al., 2017). This is not supported by our findings as all participants approached mentors who were committed to mentoring during the programme. The successful experiences in our programme may be the result of participants' being highly motivated and committed to working on their leadership and professional development as well as having similar research interests and/or career ambitions as their mentors. The reciprocal interests between the mentees and mentors may have supported the willingness to invest in mentoring. Similar research interests may be a reason for mentoring relationships evolving into research collaborations. However, the research area of the participants in our study seemed to have a limited role within the mentoring relationship. Despite this, it may be valuable to approach a mentor within the same research field to facilitate potential collaboration in the future, which was also one of the intended programme outcomes.

Characteristics of the mentors also contributed to successful experiences, which is in line with the findings of Prol (2020) demonstrating that characteristics such as availability, accessibility and willingness to invest in students and their projects were attributes that DNS graduates valued most in their mentors. Further, good communication, availability, similar expertise, supportiveness, mutuality and responsiveness were found to support effective mentoring (Busby et al., 2022; Cross et al., 2019). These findings were also reflected by participants in our study, who described their mentors as being genuinely interested in them and in their work and careers and as being committed to making mentoring agreements.

Improved performances in research team leadership were found, which was in line with an earlier study that reported the positive impact of mentoring on research competences and research team management

Table 1
The Nurse-Lead programme.

Components of the Nursing Leadership Educational and Mentoring (Nurse-Lead) programme				
A. Online course modules Ten learning units for DP focusing on: - Development of a vision on research - Clinical credibility - Strategic leadership - Research management - Entrepreneurship in research - National and international research collaboration - Grant funding - Work-life balance - Team leadership - Global leadership Seven learning units for DNS focusing on: - Leadership in nursing - The first steps as a leader - Development of a vision on research - Clinical credibility - Research dissemination and implementation - Research management - Ethical issues in nursing research Various learning method were used including reading literature, view web lectures, individual and group assignments, reflection and group discussions.	**B. Personal leadership development plan** At the start the participants developed a leadership development plan based on an assessment of their leadership and professional competences. Also, observer assessment of colleagues were obtained. Based on these reflections, the participants developed a leadership development plan with goals and actions. The plan was followed up on during the mentoring conversations.	**C. Individual mentoring trajectory** - Each participant identified a mentor who committed to having regular mentoring meetings for at least the duration of the programme - The mentor preferably was a leading international academic expert in nursing (science); known to be an expert in the participants' area of research; has demonstrated his/her ability to be a mentor and has a different nationality. The participants therefore were advised to choose a mentor outside their working organization. - The leadership development plan was used to link the participants' efforts with the support of the mentor - Monthly or bimonthly meetings were advised	**D. Meet the expert sessions** Lectures were held by leading international nurse scientists who shared their experiences with building a career in nursing science as well as their expertise in various research or work fields. Following these lectures was voluntary.	**E. On-site programme meetings** Two two-day meetings were organized. One meeting was held face to face and one meeting was an online event. During the program meetings lectures were held by nurse leaders and participants had the opportunity to connect with the program leaders and participants in the program.

(Hafsteinsdóttir et al., 2017). Management of team leadership is one of the fifteen competences required for successful postdoctoral research careers (Numminen et al., 2019). Management of team leadership entails the ability to establish and lead research teams, to manage research projects independently and to influence team members. Management of teamwork was another competence defined in the competence profile for doctorally prepared nurses and comprises interpersonal, interprofessional and interdisciplinary communication skills including dialogue, consultancy and valuing of others (Numminen et al., 2019). When reflecting on findings from the study, it becomes apparent that mentoring stimulates development of team leadership competences and management of team working competences. The leadership competences of the Nurse-Lead participants were supported by thorough reflection on their professional ambitions, which contributed to clearer visions towards their research and careers. Participants in our study described feeling more confident as a result of the supportive conversations during mentoring, which was also demonstrated in the review of Hafsteindsóttir et al. (2017).

It will be critical to provide access to mentoring for DPN and DNS across all countries to support them in developing and/or maintaining strong careers. The next generation of mentors for future DPN and DNS may need to step up early in their careers because of an aging doctorally prepared workforce (Broome et al., 2021). This means that novice DPN nurses need support to develop mentoring competences (Numminen et al., 2019). Therefore, it is important to use an individualized approach and to not restrict mentoring to traditional face-to-face mentoring, boundaries of organizations, hierarchical relationships or pre-set goals and/or assignments (Agger et al., 2017; Brody et al., 2016; de Janasz and Godshalk, 2013; Pololi and Evans, 2015). Collaboration between universities may facilitate high-quality mentoring programmes for those who have (specific) mentoring needs or those working in organizations where mentoring is not yet being facilitated. Exploring these types of

strategies could be important since high-quality mentoring is expected to enhance the mentee's leadership and professional development, thereby improving their impact in all areas of health care where they work including research, clinical care, education, policy and management.

6.1. Limitations

This study was carefully prepared and conducted and the trustworthiness of the study was strengthened by researcher triangulation in the analysis, thick description and the reflective approach used by the researchers (Lincoln and Guba, 1985). However, several limitations need to be taken into consideration. Bias may have occurred during the recruitment of participants since those who were active and engaged in the programme might have been more likely to participate in the study and may have reported more positive experiences than those who were less engaged in the programme. Demographic data of the participants not included in this study were not obtained for study purposes and therefore these groups cannot be compared.

Potential bias may have also occurred due to the potential relationships between the researchers and participants in this study. The research team deliberately attempted to divide participants and moderators from the same country (and who know each other) into different focus groups, but this was not always possible. The moderators encouraged open discussions and encouraged all participants to engage in the discussions. However, pre-existing relationships may have provided an in-depth understanding of the context of experiences in some of the pairs.

The focus groups were conducted by different researchers and observers. All moderators had experience with leading focus groups, but might have used different approaches, resulting in priority being given to different topics within the interviews. The interviews were conducted

at the same time due to practical considerations and therefore we were unable to refine the interview guide based on experiences reported during the interviews. This would have provided the opportunity to gain more insight into the differences in experiences between DPN and DNS and their plans for continued mentoring after the end of the programme.

Mentoring within the Nurse-Lead programme cannot be considered a systematic intervention since there was variance in the individual mentoring trajectories of the participants. The Nurse-Lead programme included components other than mentoring. These other components, such as the online modules, may have contributed to the professional and leadership development of the participants as well. To draw conclusions about the influence of mentoring on the leadership and professional development of DPN and DNS further robust research is needed.

7. Conclusion

This study found that the Nurse-Lead programme facilitated the development of supportive mentoring trajectories for DNS and DPN. The participants established successful mentoring trajectories and shared positive experiences with being mentored. Participants described feeling more confident in their work, making more conscious decisions on the development of their research and being empowered to take next steps in their careers. By developing mentoring programmes like the Nurse-Lead programme, based on collaboration among universities, mentoring would be made accessible for an increased number of (aspiring) doctorally prepared nurses. The positive experiences of participants may indicate that a similar approach can be followed when developing mentoring programmes in the future. Further evaluations with more robust research designs are recommended to determine the impact of web-based mentoring programmes on DNS' and DPN's leadership and professional development. (Table 1).

CRediT authorship contribution statement

Lisa van Dongen: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft. **Helena Leino-Kilpi:** Conceptualization, Methodology, Validation, Investigation, Writing – review & editing. **Helga Jónsdóttir:** Conceptualization, Methodology, Validation, Investigation, Writing – review & editing. **Gabriele Meyer:** Conceptualization, Methodology, Investigation, Writing – review & editing. **Adriana Henriques:** Conceptualization, Methodology, Investigation, Writing – review & editing. **Lisette Schoonhoven:** Conceptualization, Methodology, Investigation, Writing – review & editing. **Riitta Suhonen:** Formal analysis, Writing – review & editing. **Thóra B. Hafsteinsdóttir:** Conceptualization, Methodology, Validation, Investigation, Writing – review & editing, Supervision.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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