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Growth of Nurse Prescribing Competence: Facilitators and Barriers during Education

Hopia, H., Karhunen, A., Heikkilä, J.

ABSTRACT

Objective. To describe facilitators and barriers in relation to the growth of nurse prescribing competence from the perspective of the nurses studying in a prescribing programme.

Background. The number of nurses enrolled in a nurse prescribing programme is rapidly increasing in XXX. However, few studies on nurse prescribing education are available and therefore research is needed, particularly from the point of view of nurses studying in the programme.

Design. The descriptive, qualitative study used the text of student online learning diaries as data during a 14-month prescribing programme. The sample consisted of 31 nurses, public health nurses or midwives enrolled in a prescribing programme at a university of applied sciences. The data was analysed by using the inductive analysis method.

Results. The growth of nurses' prescribing competence was facilitated by learning clinical examination of the patient; networking with peers; receiving support from the workplace and supervisors; doctors' positive attitude towards nurse prescribing, and being able to apply competencies directly to nursing practice. The barriers to the growth of nurses' prescribing competence were unclear job description, incomplete care plans and concerns about how consultation with doctors will be organised and realised.

Conclusions. The results show that, for the purpose of developing the new role and position of nurse prescribers, educators and nursing managers must invest more in staff awareness of nurse prescribing education and also offer more support to nurse prescribers in their workplaces.

Relevance to clinical practice. The results of this study can be utilised especially in countries where nurse prescribing education is only in the process of being planned or has just been started. Heads of nursing and educators in prescribing education will benefit from the results when creating expanded job descriptions for nurses and supporting networking between students during the period of training.

Key words: competence, nurse prescribing, nurse prescribing education, professional development

What does this paper contribute to the wider global clinical community?

- Nurse prescribing education should pay more attention to making the contents and level of the education known to students' employers in order to enable them to be better aware of nurses' prescribing competence.
- Prescribing education must invest in learning methods that facilitate networking between students. Networking is important, as workplaces usually have only a few nurses who have undergone prescribing education. Networking will then help in building the new job description.
- It is important for nurses in a prescribing programme to create a job description that corresponds to their new competence as well as a workplace support network already during the course of training so that they can utilise the new competence in full.

Introduction

The autonomy and job satisfaction of nurses have increased as a result of prescribing, and the expansion of their job description has been beneficial to their professional development. Prescribing does, in fact, seem to strengthen the nurse's role as an expert. (Boreham *et al.* 2013, Carey *et al.* 2014, Wilkinson *et al.* 2014.) Despite this, there is still limited information on the perspective of nurses themselves regarding their role as a prescriber, on the factors affecting adoption of nurse prescribing in practice and on increased competence (Lewis-Evans & Jester 2004, Bowskill *et al.* 2013). There is a paucity of research about nurses' perception of how their competence is utilised in the workplace during the course of prescribing education. Thus, more research is necessary in order for nurse prescribing education to be developed and the acquired competence utilised in workplaces already during the training programme and afterwards. The purpose of this study is to produce descriptive information on the experiences of nurses undergoing prescribing education in terms of factors facilitating and inhibiting the growth of prescribing competence.

Background

Researchers have reported that factors contributing to the implementation of nurse prescribing are acceptance of the nurse's expanded role in the workplace and adequate support. Furthermore, there must be trust between nurses and doctors, and the collaborative relationship must be functional in order to ensure a high standard of prescribing (Stenner *et al.* 2010, Bowskill *et al.* 2013). According to Stenner and Courtney (2008), a factor inhibiting implementation of nurse prescribing is the failure of healthcare staff to understand the nurse's new role and lack of or weak support for this. Nurses with the authorization to prescribe are concerned about their increasing responsibility and about receiving adequate support (Kelly *et al.* 2010, Carey *et al.* 2014). As Ross and Kettles (2012) have highlighted, the fact that the new role is not identified or recognised in workplaces and salaries have not risen in line with the increase in the job's requirement level contributes to dissatisfaction. Carey *et al.* (2010) recommend that staff identify individual and organisational factors affecting nurse prescribing practices. Identification of these factors makes it possible to affect them and thus utilise nurse prescribing already during the course of training. In the

Netherlands, changes in practices relating to nurse prescribing were studied in 2006 and again in 2012 (Kroezen *et al.* 2014). The study shows that the number of nurses who felt that they had sufficient competence to prescribe medicines remained the same. These were 12% of the respondents in both years. According to Kroezen *et al.* (2014), the number of Dutch nurses who felt poorly prepared to prescribe medicines remained high in both years. It is important to identify the factors affecting utilisation of nurse prescribing competence in practice as well as its growth.

In XXX, nurse prescribing education began in 2011, and currently the number of nurses who have completed the training is about **270**. The training takes 14 months, and is aimed at **registered** nurses, public health nurses or midwives working in the public primary healthcare sector. **Applicants must have, within the last five years, at least three years of work experience in the field where they will be prescribing drugs. The certificate of the 45-credits (ECTS) post-degree programme can be obtained only from higher education institution (see ECTC credit system European Commission 2016a). The training is set on European Qualification Framework at level seven (European Commission 2016b), and the studies can be recognized as part of a Master Degree studies. The competence domains are the following: ethical and juridical, clinical examination and assessment of the health status, evidence-based decision-making, and drug therapy. The main modules contain pharmacology and clinical pharmacology, clinical medicine and pathology, evidence-based guidelines and clinical nursing. Nurses undertake 20 contact days on campus that contain lectures, case studies, clinical examination skill labs and simulations, and OSCE (objective structured clinical examination). All nurse-participants have named doctor as a mentor who is responsible of supervising and assessing the competency development in practice. National certification exam is required before graduation. The right to prescribe is registered in a national register held by National Supervisory Author (XXX).**

In XXX, the legislation regulating nurse prescribing contains national specificities and restrictions. For example, nurses can continue a patient's medication on the condition that a doctor has drawn up a written

care plan for the patient. Nurses must be able to immediately consult a doctor in their work. (Health Care Professionals Act XXX). Nurse prescribing education and the competence it provides has not been studied much in XXX.

Objective

The objective of the study is to describe facilitators and barriers in relation to the growth of prescribing competence during the course of training. The results can be used when developing nurse prescribing education and in utilising a nurse's new competence in workplaces.

Design

Data collection

The target group consisted of two groups of students beginning prescribing education who wrote a learning diary for the duration of the training. The number of subjects totalled 36 (n= 15 2012, n=21 2013). Of these, 31 gave their written consent to the use of their diaries as research material. The diary was kept for the duration of the training (14 months) in a closed online learning environment in stages as the programme progressed. Table 1 describes the assignments in the learning diaries and their schedule during the training programme. The teacher provided feedback, which supported the growth of competence and the expansion the new role in all diary entries. The students did not see each other's diaries.

Table 1 here

Participants

Thirty of the subjects were female and one was male. The youngest was 32 and the oldest 57. Eight were qualified public health nurses, in addition to possessing a qualification in nursing, and two were qualified midwives. One-third of the subjects had bachelor's degree from a university of applied sciences and two-thirds had a college-level qualification. All of the subjects had at least five years' work experience in the

field. Table 2 shows the background information of the subjects.

Table 2 here

Analysis

The diary material was analysed by means of inductive content analysis following the analysis described by Patton (2015 p. 541–546). The diary material was extracted from the online learning environment into a word processing programme and the diaries were numbered sequentially up to 31. The diaries were then read through several times in order to obtain an overall picture of the phenomenon being studied. First, the material was simplified by extracting into a separate class the expressions, which seemed to describe factors facilitating or inhibiting the growth of competence. The analysis unit of an expression was a coherent whole describing a facilitating or inhibiting factor of individual writers, which was counted quantitatively as a single expression. Simplification refers to the summarisation of the material so that the significant expressions, including their content, were retained. After simplification, the analysis units were read through carefully and summarised once again, for example, in the following manner: Original expression: *“The only problem here is that I have still not yet been provided with a new job description.”* (Nurse 1) – summarisation: The problem was lack of a new job description.

At this stage, the original material was read through again several times. The researchers reviewed simplified and summarised expressions already created, and these were divided into more precise groups forming a joint content for similar expressions and eliminating overlaps. In the analysis, the researchers constantly took care not to excessively group the material, so as not to decrease the information value of the results. Expressions describing phenomena that were similar in terms of content were classified into their own groups and logical entities were created from these. The original expressions were returned to several times in order to confirm the described phenomenon. A common meaning was sought for entities that were similar in terms of content and from these a unifying concept was formed. The expressions were returned to on numerous occasions during the analysis in order to obtain confirmation for the formation of

the unifying concept. It was from these concepts that the facilitators or barriers in relation to the growth of nurse prescribing were formed.

Ethical consideration

Permission for conducting the study was granted by the University of Applied Sciences. The respondents were informed about the study and they provided written informed consent for the use of their learning diaries as research data. The identity of the respondents was not disclosed at any stage when reporting the results.

Results

The growth of nurse prescribing competence during the training was facilitated by learning clinical examination of the patient, networking with peers, support from the work community and the supervisor, the positive attitude of doctors towards nurse prescribing and utilising the competence provided by the programme already during the course of training. The growth of prescribing competence during training was inhibited by the nurse's unclear job description, inadequate care plans and concern about the organisation and implementation of consultation.

Factors facilitating growth of nurse prescribing competence

Learning clinical examination of patients

The subjects described their competence as having improved when examining patients during the course of training. Patient examination then became a natural and systematic activity during training, as described below by one of the subjects: *"The fear of touching patients has disappeared, and at this stage it already feels natural to place a patient on the examination table and examine him or her."* (S4). Moreover, learning to examine patients helped the subjects to justify examination findings and to draw conclusions from them: *"I experience feelings of success when a doctor has examined a patient after I have and has come to the*

same conclusions as me. It gives me positive energy and belief in my skills.” (S3). The subjects described how the feeling of strengthening competence was furthered by the confidence shown by doctors in the competence of the subjects. Regarding their experience, one of them writes the following: *“Feedback from patients and doctors indicating that a clinical examination has been conducted well and that the conclusions and treatment are correct gives you a feeling of greater competence and capability in treating patients' problems – you experience feelings of success that will carry you a long way.”* (S7). The feedback received from patients regarding the examination also strengthened the growth of competence during training. *“Now I have learned to carry out a clinical examination more comprehensively. The patients were satisfied, and a comment frequently heard was, “I was examined and treated as whole!”* (S24).

Studying clinical examination provided the subjects with a great deal of new knowledge, and also deepened their previous competence. A subject describes the development of their competence as follows: *“My patient examination skills have also widened. For example, I have never listened to a patient's lungs before. I have now done this in my work and I have diagnosed, for example, wheezing in the lungs of an asthmatic.”* (S19). Learning to examine patients also helped the subjects to take them into account on a more comprehensive level than before the training. *“Studying patient examination during the training helped to deepen my expertise. Now I must go a little deeper.”* (S24). Learning patient examination seemed to provide a new perspective on and a challenge to the work, which gave satisfaction to the subjects.

Networking with peers

Networking with other students in nurse prescribing training and with those who had already graduated was regarded as an important factor in the growth of competence. According to the subjects, experiences are shared through networking and mutual support is provided in the new role. Peer support was especially easily available when there were several participants from the same workplace undergoing the training, or if there were colleagues who had already participated in nurse prescribing education. According to the description of a subject: *“In our work unit, there is one nurse who has the right to prescribe. I have talked to*

her about how she has experienced her new role. Her experience has been highly positive, and she wants to develop our future job description further.” (S30). It was experienced that nurses who had undergone the same training understand the new job description and the associated challenges the role brings.

“Fortunately, there will soon be three of us in our workplace who have undergone nurse prescribing education, and we will be able to act as peer support for each other and, if necessary, request help from another person who understands the situation.” (S2).

The subjects had created a social media group where issues relating to education were discussed during the training. The subjects valued their own group, as it provided encouragement, support and information.

Contact teaching relating to the training were also regarded as important for developing competence as, according to the view of the subjects, they provided an opportunity to share experiences, assess practices and learn together. It was also considered important that employers enable those undergoing nurse prescribing education and those who have completed the training to participate in joint national events, as described by one of the subjects: *“It would be nice to be able to meet similar colleagues at least once a year, to hear about new developments around the world and to upgrade know-how.” (S7).* The nurses studied were also strongly motivated to set up their own association, and the importance of this was referred to in a number of the diaries.

Support from workplace and supervisor

According to the subjects, support from the workplace, encouragement and time for studies contributed to the growth of competence in prescribing during the training. The attitude of colleagues and supervisors was generally rated as positive and encouraging towards the training, as described by one of the subjects:

“Fortunately good friends around the coffee table at work provided learning support, and in mentor-like fashion guided me on the path to learning and encouraged my progress.” (S12). The subjects wrote how colleagues at work asked them for advice already during the period of training, which gave them confidence in their expertise. The diaries also indicated that workplace colleagues were interested in the

competence of those undergoing the training and in the programme to be completed: *"I have received positive feedback regarding my professional skills and competence from a few colleagues, too."* (S11).

The subjects regarded their immediate supervisor's understanding attitude towards the training and effort to support them in their new role as important. The subjects described how, with the support of their supervisor in their new role, they could utilise their new competence in their workplace. *"We have a good work community, but I am still anxious how the others at work will react. I often also wonder whether my employer will be able to utilise this training in the right way."* (S17).

Positive attitude of doctors

The positive attitude of doctors in the workplace towards nurse prescribing training and associated practical on-the-job-learning had considerable importance for the development of competence during the programme. The subjects rated cooperation with doctors as being mainly good and smooth. The subjects felt that the doctors helped them daily by responding to questions and concerns. Good cooperation was also regarded as having a role in enabling ethical issues regarding treatment and medication to be frankly raised with a doctor. The doctor furthered the competence of nurses undergoing the training by providing and creating opportunities for them to practice their skills in practice: *"They (the workplace doctors) give me opportunities to participate in planning treatment and choosing medication and providing justifications."* (S1). As the nurse prescribing education programme progressed, subjects noticed that the doctors' confidence in them increased, as described by one of the subjects: *"Doctors' confidence in us has clearly increased as training progresses."* (S2).

The doctors gave the subjects positive feedback regarding their work during the course of training. One subject wrote: *"The doctor guiding me said after one diabetic case, 'What do we need doctors for anymore?' From him, that was saying a lot, as he seldom gave positive feedback."* (S24). Positive feedback gave the subjects more motivation for the training and for their new role as a prescriber in the workplace.

According to the subjects, the doctor's role during the training was to provide support and to act as a safeguard in various decision-making situations. However, the subjects were of the opinion that the new role of the nurse requires that doctors have confidence in the professional skills of the nurse, as one of the subject reports: *"I have personally experienced a clear difference between young doctors and those who have been in practice for a longer period of time. The younger doctors listen to the nurse's assessments carefully and trust observations made; older doctors want to repeat the same examinations themselves afterwards."* (S16).

Utilisation of competence during training

The subjects described in their diaries how they had been able to apply what they had learned already during the course of the training. During the training, the subjects not only updated their pharmacological knowledge, but learned numerous new things about medicines and pharmacotherapy. The taking of a more comprehensive medical history increased during the training, which the subjects regarded as an important skill. *"I am able to widely apply what I have learned about clinical examination and pharmacotherapy both to chronically ill patients and to emergency patients."* (S16). The subjects shared new knowledge actively with their work community, for which they received positive feedback from their colleagues. The increase in competence also increased their independent status at work. *"I feel that I am able to work more independently in my own nursing field, as I have acquired a sense of confidence when examining patients. My job has become more meaningful, and I have gained new tools for examining patients."* (S26).

According to the diaries, the subjects learned to apply and utilise health-related sources, such as national databases, more efficiently in patient work. *"Previously, I did not know how to use the health portal as a tool as efficiently as I do now. On a number of occasions, whilst on the observation ward, I have checked the compatibilities of medicines with the help of the health portal's database, and I have also found excellent home-care instructions for patients too."* (S30). Learning new things made the subjects more critical of the practices used in the workplace. For example, the subjects reported that already during the course of the

training they pay more attention to recording information on patient medication, to the use of sleeping pills and tranquillisers, to the effects of drug treatment and to overall patient medication than before they underwent the programme. *“Nowadays, I often ask whether the use of sleeping pills and tranquillisers is necessary. Sleeping pills have fairly often remained part of a patient's medication regimen, even though they are meant only for short-term use.”* (S18).

Factors inhibiting growth of nurse prescribing competence

Unclear job description

The subjects actively considered their future role after nurse prescribing education. The future job description, in particular, was the subject of discussion at the beginning of the training. A variety of concerns and uncertainty were raised in the diaries. One of the subjects asked the following question in their diary: *“Where is our place in the work community? Where is my position in my workplace? Am I somewhere midway between other nurses and a doctor?”* (S17). Some of them were of the view that the work communities had not prepared for the new role of a prescribing nurse. One of the subjects expressed their feeling as follows: *“My workplace has not yet taken into account at this stage that next year there will be a nurse who could renew prescriptions if care plans were made.”* (S11). The subjects had discussed their future job description with their supervisor at the beginning of the training but, as the programme progressed, the new role had still not always been defined. Some of the subjects, in turn, wrote how plans to change their job description had been made but, in the view of the subjects, they nevertheless remained too open and lacked concrete job descriptions and scheduling. The employer was expected to provide a precise job description and to determine responsibilities in prescribing. Moreover, they wanted the new role to be clear for all members of the work community. The subjects wanted the rest of the nursing staff to know when a patient could be referred to a nurse who has undergone the prescribing education programme and when a patient must be referred to a doctor: *“Sometimes it seems that colleagues do not know yet how to identify the type of patients that should be referred to the nurse who has prescriptive*

authority, if we consider nursing from the patient's point of view.” (S2). Some of the subjects felt considerable uncertainty about what their new job description would be. They were especially concerned that the employer might not utilise their new competence.

The subjects valued their additional training and the wider competence acquired through it. They hoped that their employer would also value the prescribing training and new competence. It was hoped that this would become tangible in the form of a salary increase. At the same time, it was hoped that a potential pay rise with the new job role would not cause envy amongst other nurses in the work community. Those subjects whose new job description had already been defined described how assumption of the new role did not necessarily go without problems. They worried about how patients, colleagues and other members of the work community would react to the new description of job. The subjects considered how they would find their own place in the work community after training. *“In a way, I am seeking my place in the work community; not all the doctors react favourably to the matter and I have sensed that some nurses have negative feelings.” (S4).*

Inadequate treatment plans

The subjects were concerned about the patients' written care plans, which were inadequate, or non-existent. According to the subjects, it is difficult to implement the new prescribing role in the work community without a sufficiently comprehensive care plan. *“The legislation is not being realised in patient care at the moment because of the absence of care plans, so I have to request notes from doctors fairly often in order to be able to renew prescriptions.” (S4).* As shown in the above, the subjects felt that it was difficult to perform the new role, as care plans may have lacked notes which are important for the nurse's new role. The subjects then described how, for example, it could be considerably more difficult to renew prescriptions. Two of the subjects commented on their situation as follows: *“I am afraid that problems will continue to arise to a greater or lesser extent in this issue, as clear/proper care plans have still not been made in the X area.” (S8), “The most difficult issue in my view is that care plans for patients here have been*

rather poorly made, therefore doctors must put considerable effort into going through them in order to derive the greatest possible benefit from nurses such as us with a limited right to prescribe." (S13). The subjects were disappointed that the care plans were not always up to date. Moreover, according to the diaries, it appears that not all the workplaces of the subjects will succeed in updating care plans during the course of the training.

Concern about organisation and implementation of consultation with doctors

The subjects emphasised that they were responsible prescribers and realised the limitations of their expertise. They report how meticulous they are when taking care of their patients. Among other things, they reported that they actively consulted a doctor in unclear issues or, when necessary, they referred the patient to a doctor. According to the subjects, pressure and the large amount of work affects consultations between nurses and doctors. Consultations may take place in a hurry or in between patient visits, in which case the possibility of errors may increase. The subjects considered the issue: *"When consulting a doctor, the responsibility is unclear; the doctor does not see the patient and a consultation given on the basis of a nurse's description contains the possibility of error."* (S16), *"The extent to which responsibility actually increases as a result of this training is a little scary."* (S27). The concern about the organisation and implementation of consultations with doctors is related to the nurse's increased responsibility. *"The care plans must be brought up to date and the practices regarding consultation with doctors made workable."* (S13). At the beginning of nurse prescribing education, some of the subjects feared the increasing responsibility but, as the training progressed, the fear and concern expressed in the diary notes decreased. The subjects described how the nurse's responsibility in prescribing must be carefully defined by the employer.

Discussion

Strengths and weaknesses of the study

According to Patton (2015, p. 653) the credibility of qualitative inquiry depends on the following elements: in-depth fieldwork; systematic analysis of data; credibility of the inquirer, and readers' and users' belief in the value of qualitative inquiry. We reviewed the strengths and weaknesses of this study by using Patton's guidelines. Salmon (2015, p. 220) also suggests that when using qualitative data collected online it ought to be evaluated according to qualitative research criteria. The fact that the subjects could not be asked specific questions relating to factors promoting or inhibiting the growth of competence can be considered as a limitation of the learning diary material. On the other hand, the virtual learning diary was in use throughout the training period. Hence the subjects were able to write their experiences regardless of time or place. In addition to this, they were given three questions (Table 1) at different stages of the training which helped them examine factors relating to the growth of competence. This may have helped the subjects to structure their experiences of competence. The feedback given by the teacher in diary writing may also have motivated the subjects to actively write in them during the training. Diary writing has, however, emphasised experience through writing, which may have weakened the output in the case of some subjects. The reliability of the results has probably been strengthened by the fact the material was analysed by two researchers who had neither acted as instructors in the nurse prescribing education programme nor knew the students. The analysis stage of the material took rather a long time, as the researchers strove to conduct the analysis carefully. In this way, the view of the subjects regarding factors promoting or inhibiting the growth of competence was probably captured more accurately. A factor weakening the transferability of the results is that the material consisted of the learning diaries of students from only one university of applied sciences. However, the target group of the study worked in different parts of the country, in which case it was possible to access the experiences of subjects from a geographically wide area.

Summary of main findings

The growth of nurse prescribing competence during the training was promoted by learning to examine patients; networking with peers; support from the work community and the supervisor; the positive attitude of doctors towards nurse prescribing, and applying the competence already during the course of training. The growth of prescribing competence during training was inhibited by the nurse's unclear job description; inadequate care plans and concern about the organisation and implementation of consultation.

Comparisons with other studies

According to the results, learning to examine patients during the course of the training promotes the growth of competence. The same conclusion was drawn by Banning (2012), according to whom nurse prescribing education fulfils its purpose for the most part, but the nurses studied wanted more training and confidence in patient examination and related assessment skills. In previous studies it has emerged that nurses with the right to prescribe have a strong need to receive support and appreciation from their supervisors, from doctors in their work community and from other colleagues (Ross & Kettles 2012, Darvishpour *et al.* 2014). In this study, too, it emerged that the nurses regarded support received from their work community and supervisor during the course of the training as important. Support is not always sufficient, however. For example, according to Smith *et al.* (2014), the nurses working in primary healthcare did not receive sufficient support with regard to the new role. The lack of the support is surprising, as researchers have been able to show that the majority of nurses are capable of prescribing safely within the limitations of their expertise (e.g., Black 2013, Naughton *et al.* 2013).

From the standpoint of utilising competence, it is extremely important that there is functional multidisciplinary cooperation in the work community and that, in addition to doctors, management also reacts positively to the nurse's new role. In this study, the positive attitude of doctors, in particular, towards nurse prescribing seemed to be an important factor promoting the growth of competence. In the

study conducted by Stenner and Courtenay (2008), the nurses appreciated good cooperation with doctors in prescribing, and this had a positive effect on the use of their competence. According to Scrafton *et al.* (2012) and Courtenay *et al.* (2012), as nurse prescribing education increases, work communities should ensure that nurses undergoing the training have sufficient support and motivated mentors. In the view of Stenner and Courtenay (2008), it is problematic if other healthcare professionals do not understand or know the nurse's role in prescribing and, on account of this, the nurse does not receive sufficient support in prescribing.

In this study, the unclear job description of nurses undergoing prescribing education proved to be a factor that prevents the growth of competence during training. Supervisors and nursing management should address this concern and clarify the role and job description of nurses in prescribing. The same opinion is held by Kroezen (2014, Kroezen *et al.* 2014) and researcher colleagues, according to whom it is essential that a systematic and structured procedure for nurse prescribing is created in work communities, and in this way new competence can be utilised to the maximum. In countries with longer experience of nurse prescribing, the role and job description seem to be relatively clear. For example, according to the results of Drennan *et al.* (2011, also Stenner *et al.* 2010), patients and the parents of paediatric patients were satisfied with care they receive from prescribing nurses and midwives. Likewise, in the studies conducted by Courtenay *et al.* (2011) and Carey *et al.* (2014), patients, nurses and other healthcare staff were satisfied with the competence and role of nurses as prescribers. In addition, the systematic survey by Gielen *et al.* (2014) showed that patients were as satisfied or even more satisfied with a prescribing nurse than with a doctor.

The results of this study show that the nurses undergoing prescribing education regarded networking with their colleagues as important, which supported the growth of their competence. The training should pay more attention to ensuring the use of **variety** pedagogical methods, which support students' networking regionally, nationally and internationally. **Clinical teaching strategies such as case method, clinical**

simulation and clinical conferences are effective in nursing (Gaberson *et al.* 2015). However, as Kamarudin *et al.* (2013) note there is limited evidence in the area of improving prescribing competency about the effectivity of different educational interventions particularly in the area of non-medical prescribing.

The meta-synthesis on nurse prescribing by Darvishpour *et al.* (2014) indicated that some doctors have a negative attitude towards prescribing nurses, and the authors suspect that doctors do not have sufficient information about the training or the level of its requirements. According to previous studies, building confidence between nurses and doctors and between nurses and their employers seems to be one of the key factors enabling prescribing competence to be effectively utilised in practice (Carey *et al.* 2010, Bowskill *et al.* 2013). According to Carey *et al.* (2010), in addition to building trust, individual organisational factors affecting the growth of competence and its utilisation must be taken into account. These include, among other things, the level of the nurse's education and expertise, and how closely the doctors control the work of a nurse who prescribes medication. More support is required for healthcare sectors in order for it to be possible to utilise and expand nurse prescribing (Blanck & Engeström 2015, Ross 2015).

Conclusions

Findings of this study underscore that many factors contribute to the growth of nurse prescribing competence. A new factor promoting the growth of competence that emerged in this study was the importance of networking during the training. Nurse prescribing education should invest effort in supporting networking using pedagogical methods that support it. In this way, strong cooperation and collegiality develop already during the training period. In addition, increasing awareness of nurse prescribing education and building a clear job description and role, and thus utilising competence already during the training period, are factors which can contribute positively to the growth of competence.

In XXX, nurses' authorization to prescribe medicines is a relatively new and independent job that is making

the role of nurses more autonomous and responsible. The training enables nurses to follow a new career path, which previously has been possible only by working abroad. Education alone, however, will not increase the efficiency of healthcare practices; rather new competence must be utilised, and the roles, duties and job descriptions of the staff must be actively changed to meet today's needs. For this reason, along with educators of prescribing programme, nursing management has a key role in ensuring that nurse prescribing is utilised to the maximum already during the course of training.

In the future, it will be important to study how the training has corresponded to the requirements of the new role, especially in those countries where the training is still new and expanded roles are in the process of being established. In addition to this, it will be necessary to assess the cost effects of nurse prescribing as well as how the new role has potentially increased the efficiency of healthcare service production and changed its organisation.

Relevance to clinical practice

The results of this study can be utilised especially in countries where nurse prescribing education is only in the process of being planned or has just been started. It is clear that expanded roles in nursing should be increased and in this way the competence of nurses who prescribe medication can be strengthened. The results obtained here can be utilised by nursing managers, who should pay particular attention to developing a clear job description and role for nurses prescribing medication, to building an adequate support network and to informing the work community about the new role and how to utilise the acquired competence to the maximum. In addition, the results could be utilised by educators of prescribing programme, who should sufficiently support nurse networking during the period of training using teaching methods that promote collegiality and cooperation. As nurse prescribing is still new in many European countries, there are not very many nurse prescribers yet in individual organisational units. For this reason, it is important that the results obtained in this study be utilised broadly in different healthcare settings and contexts, thus ensuring the professional growth and development of nurses who have an expanded role.

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Table 1. Assignments and schedule in learning diaries

Assignments	Prior to assignment	Schedule
Describe your expectations regarding nurse prescribing and what kind of development challenges you have.	Familiarisation with the competence goals of training and completion of a competence analysis.	At the start of training.
Examine your future job description in relation to the current literature on nurse prescribing.		Midway through training.
Reflect on the development of your competence upon completion of the training and on what your job description will eventually be.		At the end of training.

Table 2 Participants' background characteristics (n=31)

Characteristics	
Gender	Female = 30 Male = 1
Age (median, range)	Mean=44 Range 32–57
Education	College level = 18 Bachelor's degree = 13
Profession	Registered nurses = 31 Registered nurses, including Public health nurses = 8 Midwife = 2
Number of years in nursing practice	Minimum of 5 years Mean 12.9 years
Work unit	Primary care = 31