Norwegian Nurse Anesthetist Perceptions of Professional Development and the Influence of Production Pressure

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Professional development is often connected with making improvements that affect patient experiences, needs, and safety. Competency maintenance, professional development, and updating skills and knowledge are demanded at workplaces, especially hospitals. The aim of this study was to examine Norwegian nurse anesthetist perceptions of professional development and research in the workplace. A qualitative method was used, which included individual interviews with a strategic sample of 14 nurse anesthetists working in anesthesia departments. A grounded theory approach was used for analysis. From the data analysis, 1 main category, “climate of professional development and research,” and 2 subcategories, “professional development and production” and “professional development and management,” were elicited.

The results show that nurse anesthetists want to maintain their knowledge so they can deliver good-quality care for the patient. The current emphasis on production seems to be a negative factor for a good climate of professional development and research. Attitudes among managers and nurses were other factors that emerged as affecting the professional environment. Both nurse anesthetists’ and anesthesia department managers have the potential to improve and increase knowledge, encourage motivation, and facilitate sufficient organization so that greater focus will be given to professional development and research in nurse anesthesia.

Keywords: Grounded theory, nurse anesthetists, perceptions, professional development and research.

Professional development is a broad term related to research and evidence-based practice. Research focuses on new knowledge, and professional development is often linked to improvements that have an impact on patients’ experiences, needs, and safety. Systematic training and skill maintenance are also referred to as professional development. Moreover, building on basic nursing skills with continued knowledge development and greater experience facilitates progression and development toward increased competence in line with Benner’s model. Improving specific clinical skills and professional development is a constant and lifelong process, according to Lannon. Nevertheless, Lannon also emphasizes the importance of developing nonclinical skills. Lannon’s research project focuses on aid and support to nurses in professional endeavors such as oral presentations and article publication.

Updating, maintaining, and developing skills are required in the workplace in general and in hospitals in particular, because skills are constantly changing in technical development and new treatment methods. Research has shown that professional development is necessary for nurses to be able to provide safe and effective medical care. Nursing managers are seen as facilitators to increase the competence of their employees.

Nurse anesthesia engages in anesthesia activity in connection with surgical procedures or research investigations and in acute care situations in and outside hospitals. The nurse anesthetists in Norway have an independent professional responsibility but collaborate and perform tasks delegated by anesthesiologists. Anesthesia nursing is advanced nursing in various work situations; both technically and equipment-wise, these situations require a high level of expertise and skills. Thus, staying up to date and maintaining competence is essential to meeting demands for increased patient safety. Yet research shows that Norwegian nurses may face barriers in their efforts to stay up to date and, relatedly, in initiating or participating in projects or research. There is still limited information on what nurse anesthetists need to meet the requirement for development, staying up to date, and working on research projects; this was confirmed by Rasmussen’s master’s thesis in 2011, Nurse Anesthetists’ Attitudes to Professional Development. The findings reveal that nurse anesthetists’ attitudes are generally positive to both professional development and research; the challenges depend on the culture of the workplace. Rasmussen concludes that professional development and research have to be an integral part of the education system as well as the workplace.
A qualitative study was conducted in 2008 in which 14 nurse anesthetists were asked what well-being factors they considered to be healthy in relation to their work. The results were published in an article in 2012, however, due to structural limitations (in terms of large data collection), some of the analyzed results were not included. Those unpublished results are presented in this article and discussed in light of updated research.

The present study aims to examine nurse anesthetists' perceptions on professional development and research at their workplace. The following research question was formulated in pursuit of this aim: What perceptions do nurse anesthetists in Norway have about professional development and research in their workplace?

**Nurse Anesthesia in Norway**

In Norway, a nurse anesthetist has a bachelor's degree and 18 months of training in nurse anesthesia, although the education criteria were extended in 2014 by 6 months, to a master's degree. The functional description of nurse anesthetists emphasizes the importance of continuing professional development and specialization. Nurse anesthetists should be encouraged to engage in professional development and research, contribute to implementing quality assurance procedures, and constantly evaluate their own and others' work.

Ethical guidelines require nursing managers to be responsible for facilitating the possibility for employees to perform their work properly, which may entail using various sources of knowledge in practice, so-called evidence-based knowledge. For employees, this means taking responsibility for ensuring that their own practice is professionally up to date. Healthcare professionals should be responsible for ensuring that their own practice is professionally, ethically, and legally defensible, is up to date, and contributes to professional development and research.

The Norwegian Ministry of Health and Care Services (HOD) is responsible for providing good and equal health and care services for the population of Norway. The HOD emphasizes that working for systematic quality and patient safety is a managerial responsibility, but it is especially important that managers working close to the patient see themselves as key professionals in this endeavor. Simulator training is described by the HOD as a teaching method for improving patient safety in both educational and clinical activities. Healthcare professionals should perform their work in accordance with the requirements of professional responsibility and care, which can be expected based on their qualifications, the nature of work, and the situation. Hence, there is a mutual responsibility, in which management is primarily responsible for overall quality and patient safety, and the individual nurse is personally responsible for being professionally up to date.

**Literature Review**

The focus of this study concerns 3 different fields of research: patient safety, nursing competence, and barriers to professional development. Patient safety is emphasized in a Swedish study that shows that nurse anesthetists prioritize practicing safe anesthesia, being a patient advocate, and reducing patient suffering. A similar American study, but with an additional focus on competence highlights the importance of nurse anesthetists continually developing their skills to meet the demands for increased patient safety. In other American studies, so-called high-fidelity simulation was used, which is described as a suitable learning method in connection with knowledge maintenance and updating. A simulation program used in fiberoptic intubation revealed that experienced nurse anesthetists increased their competence, mastery, and satisfaction using simulation. Different factors can influence the climate for professional development. A study of Norwegian operating room nurses demonstrated that lack of time was experienced as a significant barrier to the ability to read work-related research articles. Other important factors included availability, inadequate access to information, and inadequate cooperation with doctors.

Advanced practice nurses can fill an important role as facilitator and bridge builder between research and clinical practice. Despite an increased awareness and commitment to professional development in clinical practice, research reveals that barriers in the form of educational and administrative challenges were present and hindered efforts to facilitate nurses to update their professional competences.

Clinical ladders, first described by Zimmer in 1972, have been used as a tool to promote nursing professional development with an emphasis on keeping clinical experts in the clinical practice field. An evaluation of a clinical ladder program of intensive care nurses showed that confidence in the work situation improved, but an organizational framework and management support were crucial to the program's success. Research by Knutheim and Bjørk revealed that nurses' participation in clinical ladders yielded greater expertise, but few used the expertise for advancing the profession. Moreover, success depended on managers being focused on expertise and professional development.

According to a Swedish study, higher education at a master's level and guidance in putting themselves into the research process are measures to strengthen the nurse's ability to plan, execute, and implement her or his research into own clinical practice. Acquisition of knowledge on how to conduct research gave both academic and professional skills. Interaction between clinical and academic activity was described as a key factor in strengthening research expertise. Furthermore, strong leadership as well as organizational and supportive infrastructure were seen as necessary elements.

In 2010, the International Federation of Nurse Anesthetists (IFNA) established a program for voluntary...
approval of nurse anesthesia programs. Three approval levels were determined, namely registration, recognition, and accreditation. After conducting annual evaluations, the IFNA stresses that authorities can be sure that education is of good quality when it is measured relative to standards developed by experts within a profession. Paris, in 2012, was the first city to have its nurse anesthesia program accredited. Both Iceland and Sweden have received “recognition” status for their anesthesia specialty programs.

In 2014, the Council on Accreditation of Nurse Anesthesia Educational Programs (COA) revised its education program to include a master’s, PhD, and a postdoctoral program for U.S. Certified Registered Nurse Anesthetists (CRNAs). Like the American certification program, this program emphasizes that additional skills occur through a learning “practice continuum” that starts at “proficient” at graduation and continues throughout the nurse’s career to the “expert” level.

Since 2014, the Oslo and Akershus University College of Applied Sciences (HiOA) in Oslo, Norway, offers a “master’s in anesthesia nursing.” The program stresses that nurse anesthetists will work on evidence-based knowledge, and professional conduct should be based on research, experience, and patient knowledge. This is in line with the Bologna process, which points to the master’s degree as required preparation for advanced practice and education.

Methods

• Design and Sample. To answer the research question, the author chose grounded theory as a relevant analytic approach. This theory was first described by Glaser and Strauss as a comparative method for analysis of qualitative data. It is a method for studying individuals' perceptions, main concerns, or problems and for generating concepts explaining basic social processes. Grounded theory emphasizes the participant’s voice (via interview), while theory is being constructed in an interactive process between the researcher and the data generated. In the analysis phase, the researcher strives for saturation, which is reached when no new information is generated by new data.

The study sample consisted of 14 nurse anesthetists (8 women and 6 men, aged 28-61 years, with 1-31 years’ practice experience), who worked in 6 different hospital anesthesia departments in the southeast area of Norway. The size of the departments ranged from 20 to 90 employees (small being defined as 20 or fewer; medium, about 40; and large, about 90). This sample was chosen in a strategic way to reflect the composition of the nurse anesthetist workforce in Norway in terms of age, gender, and experience (Norwegian Association of Nurse Anesthetists [ALNSF]), unpublished written communication, 2008). The size of the sample was based on the author’s experience and examples from the literature on grounded theory concerning how many participants are required to reach saturation.

Oral and written inquiries for participants were made and the latter were sent to the nurse anesthesia managers of 3 different departments. They had the responsibility to forward the inquiry by mail to their subordinate nurse anesthetists. Unfortunately, only 4 participants responded. A new inquiry was then sent out, which resulted in 1 more informant. After this reminder, 3 more departments were contacted. These contacts resulted in 7 more informants, 3 of them from a large department, 2 from a medium-sized department, and 2 from a small department, which brought the total to 12 participants (6 female and 6 male nurse anesthetists). Finally, 2 female participants with less experience (1 and 8 years) were recruited by contacting nurse anesthesia managers as described, making for a total sample of 14 participants.

• Data Collection and Analysis. Data were collected from May to November 2008. An interview guide was used, which included questions related to professional development (Table). All interviews were conducted in person by the author. The interviews lasted between 50 and 90 minutes.

During the interviews, the participants were also given the opportunity to raise questions of relevance to them. The researcher was aware of the importance to listen and to try to avoid biases. The researcher also tried to establish dialogical validity by asking follow-up questions to strengthen the intersubjectivity between the interviewer and the participant. Throughout the process, the researcher tried to be as open and honest as possible, and every step was carefully considered and assessed in accordance with guidelines for qualitative interviews. The interviews were audi-taped, transcribed verbatim by the author soon after the interviews, and then analyzed according to Malterud’s norms for a complete data analysis. The categorization was mainly accomplished (only main category and subcategories) according to the principles of Strauss and Corbin. The analytic techniques included open, axial, and selective coding.

Open coding means that the substance of data was captured and segmented into substantive codes, which
were concretely labeled. The process of open coding resulted in clusters of codes with similar content, which were gathered into categories with more abstract labels. In axial coding, the categories were further developed and subcategories were identified. Comparisons and relationships among the categories were sought, and data were put together into new entities. In selective coding, the categories were saturated (until no new information was generated by new data) with additional information and were assessed with new transcribed interviews or recording of previously analyzed data. In the current study, only a small amount of new information was generated after the 13th interview and none after the 14th. A main category was finally identified, which described a psychosocial process. This main category was central in the data and could be related to the subcategories.

• Ethical Considerations. According to Norwegian regulations, the study plan was submitted to the Regional Research Ethical Committee for approval, but the committee concluded that it was not necessary for ethical approval. The Data Inspectorate approved the procedure of collecting data, and the data were deleted 2 years after approval in accordance with the regulations. Consent from the participants was obtained by voluntary participation. Oral information was given before each interview. Confidentiality was promised, as was safety from individual consequences of participation (by ensuring that there would be no identifying or recognizable quotation or information used).

Results

Analysis of the interviews yielded a main category, climate for professional development and research, consisting of 2 subcategories, professional development and management and professional development and production.

• Climate for Professional Development and Research.
The main category, climate for professional development and research, describes the focus on cultivating a climate within the nurse anesthetists’ workplace, including components such as motivation, facilitation, and resources (eg, time, guidance, and education).

The nurse anesthetists said they were concerned with professional development, but resources need to be allocated to incorporating it into working hours. Only a few participants mentioned having the time or energy to read, for example, research articles after their work shift. Most participants believed that management did not convey expectations to keep up to date in the profession, but they felt their own pressure to stay well informed and to use newly developed methods. Participation in courses and professional activities at their own workplaces was seen as important for maintaining competence, which could be used actively in the patients’ settings. One participant stated: “I get theoretical refills that I can take with me into the operating room and use them there. I see that as professional development; it should be something that happens regularly.”

Mentors, or “contact nurses,” for new employees was common in all departments and was seen as positive. Some participants used contact nurses as a mentor even after regular training was over. Participants often asked anesthesiologists for information and saw it as an opportunity to increase competence. Questions might seek simply to confirm that what the nurse anesthetist had done was correct or to obtain relevant medical knowledge. Nevertheless, some participants believed that collaboration could have been better. A comment was “there is insufficient collaboration between anesthesiologists and us; they are there, while nurse anesthetists are on the other side.”

• Professional Development and Management. The subcategory professional development and management describes the dependent relationship to the departmental management. Nurse anesthetists expressed that professional development required time and economic resources to be implemented efficiently and with fair accessibility. They also expressed that nursing management had an important role as a catalyst and driving force for professional development. Important measures were to arrange shifts, give free courses, and maintain planned study time. Most participants believed that the individual nurse anesthetist could be met with greater demands by management to work on professional development, but then resources must also be allocated to it. “It is easier to engage in professional development when one is not standing in the operating theater all day.”

Several younger participants wanted greater management engagement for professional development, and asked for improving the profession’s profile. Anesthesia nurses were more than happy to attend the continuing education courses, but it was still difficult to go from there into pursuing their own projects or research. “I think there could be many who would be interested to begin with a little project, but it is a low priority for the managers. Yes, I think it takes a lot of time.”

One of the units had a research project that was initiated by management, and another, on the initiative of a nurse anesthetist. This was seen as suitable and highly motivating. Management helped to facilitate and granted some leave for conducting the research. For most participants, however, professional development was not linked to research, and neither they nor management had a focus on research. “It is not so deep in our culture, to pursue studies outside what we are doing at work.” “It is not a research climate; we are not of that type.”

• Professional Development and Production. The subcategory professional development and production describes the competition between production demands and opportunities to maintain professional competence and development. Most participants believed that professional development and competence maintenance
became more and more necessary, but there was a constant battle between time for professional development and time for production. According to several informants, study time and professional development days were withdrawn or taken away because of staff shortages and production priorities. “There has been no priority for [professional development] ... yes, it’s all about production.”

The participants who had the opportunity to engage in professional development during work time thought it was worth the extra workload to maintain the agreed period of study time or professional development days.

Participants from 2 anesthesia departments pointed out that professional development was greatly accounted for. For example, temporary employees were hired so that as many permanent employees as possible could participate in professional seminars. “Professional development days will not be withdrawn, even with a heavy workload, so long as it’s not catastrophic. They are very well followed up.”

Others expressed disappointment for having too little time for professional activities in relation to production; they found that nurse anesthesia is a specialized profession that one must follow, and the phrase “great unrest” applies if nurses are treated as mere production workers. Senior nurse anesthetists pointed out that their job was of a practical nature and that they really do not strive for a theorization of the profession. “We are concerned with the practical; I am not a very theoretical person.”

Discussion

The main category climate for professional development and research indicates that nurse anesthetists need support and facilitation to update themselves professionally. Moreover, they not only lacked engagement and initiative, but demands from management’s side were likewise often absent. The findings in this study show that professional development was highly linked to formal learning in the form of courses, seminars, or other planned activities, which were implemented in the department, with specific frames and predetermined goals. Is it then professional development, or is it just a maintenance of the status quo? According to Mathisen,1 there is a need to systematically update manuals, policies, and procedures in professional development in nurse anesthesia. The annual test of nurse anesthetists’ competence in operating medical technical equipment is something that commonly occurs in workplaces where medical technical equipment is used in patient care, and is required as part of the internal control and patient safety routines.13,18 This test thus falls under the category of professional development.1

An alternative and complement to this annual test are web-based courses that each employee should perform on his or her own and register when completed. This emphasizes personal responsibility of the employee and documentation regarding ethical guidelines and Norwegian law,14,18 and that the internal control routines are followed. For the advanced practice nurses, who are often the professionals who plan for these annual tests, this alternative learning method will save both time and workload. This time saved can be used for other professional development activities for employees.

Several participants voiced their lack of interest in further developing themselves beyond what was needed to maintain their competence. This finding sounds worrisome, in which nurse anesthetists are satisfied with only maintenance and not demanding further professional development. This is congruent with the research of Rasmussen,11 who found barriers such as lack of motivation, failing to see the need for change, and inadequate research reliability. There seems to be a need for attitude changes among both management and the individual nurse anesthetists. However, how can these attitudes be handled? Management ought to promote motivation and ask for and use newly acquired knowledge.10 Then the nurse anesthetist can be engaged and perhaps see the value of further competence improvement. In addition, there should be an emphasis on increased competence in terms of education at a higher level, the clinical ladder, and simulation containing training in rare and advanced tasks.26,27 This might give the nurse anesthetist more confidence in the work environment and, not least, better competence to meet the demands for increased patient safety.16,17,20 The clinical ladder has proved to be a means for nurses to update their professional skills, but the effectiveness of these measures depends not only on the individual’s higher academic level but also to a large extent on contextual frames.24,26 In those contextual settings, advanced practice nurses can contribute with important knowledge and expertise24 and act as a bridge builder between the academic and clinical contexts.

As for professional development and management, anesthesia department managers must adhere to their responsibilities in organizing time and space for professional development,18 while the individual takes responsibility for updating and learning in accordance with the ethical guidelines’ requirement of staying up to date and working safely.14,15 The findings of this study show that nurse anesthetists are keen to stay up to date and ensure the quality of own work through participation in seminars and courses. This is congruent with research showing that “providing safe anesthesia” was a first priority in nurse anesthesia.19 Safety is also pointed out in the Norwegian standard of anesthesia,13 where there are requirements that nurse anesthetists must evaluate and determine if it is in line with the discipline’s guidelines.

Simulation is a way to ensure the quality of high-risk tasks, especially for those tasks that professionals rarely confront in everyday clinical life.20,21 Many, including experienced nurse anesthetists, had no experience
with high-fidelity simulation, but they believed they could benefit from it, both in clinical work and as part of a recertification program. Norwegian authorities promote the use of simulation as a learning method in the healthcare system and believe that fictional but realistic exercise situations can increase quality and patient safety via training in rarely occurring but difficult tasks. As the anesthesia nurses work at an advanced level, simulation can contribute to improved patient safety while giving the worker confidence, especially in challenging work situations.

Guidance or mentoring activities for graduate nurse anesthetists were common and were recognized in all units. Some had established both personal and professional relationships with his or her mentor, so that experiences were exchanged long after training for new employees was terminated. This is a good beginning and in line with the US recertification program’s policy, in which graduates of nurse anesthesia programs receive guidance and further systematic training is required throughout their professional career. In clinical practice, this should happen via socialization and acquisition of competence consistently with Binzer’s model from novice to expert.

Finally, in professional development and production, project and research work was rarely highlighted by the nurse anesthetists in this study. A few participants who had experiences or connections with projects or research found this to be highly motivating. Most believed that the signals management delivered, in the form of increased efficiency requirements, deficiencies in resources, and structure of the nurse anesthetists’ work, made it impossible for them to conduct research. These statements are consistent with the evaluation of clinical ladders and participation in a “research and development program”, in which conditions such as frameworks were highlighted as barriers to professional development.

The findings of this study reveal that changes should be made to allow nurse anesthetists to develop professionally and to promote initiatives that provide motivation and knowledge for academic and research work. Nurse managers should increase their mapping competence, as Surakka points out in her research, as well as facilitating conditions. Methodological proficiencies can be a valuable contribution to improving academic knowledge in the nurse anesthesia profession. The new master’s degree program in nurse anesthesia in Norway may be a good contribution, because science and research methods are separate subjects. Is it time for recertification, and should Norwegian educational institutions apply for approval as the IFNA recommends in relation to international standards? Will that be a useful contribution to profiling and improving the profession’s status? Can a higher professional status yield better collaboration with the anesthesiologists, which some nurse anesthetists pointed out as challenging?

In 2008, when this study was conducted, the plans for extending nurse anesthesia education to a master’s level was added, and now they are implemented. It will be interesting to see if Norwegian nurse anesthetists have a greater interest and motivation for professional development and research in the future and are knowledgeable of methods used in the research field, as Bäck-Pettersson et al found in their research concerning registered nurses. Alternatively, is there still too much competition between production pressures and professional development needs in the nurse anesthesia profession?

This study has some limitations. The recruitment of participants was difficult, and therefore the sampling procedure had to be extended. Voluntary participation was used, and the researcher was either contacted directly by the participants or indirectly by their managers. It cannot be excluded that the sample procedure has influenced the results. Presumably, the participation of the participants was based on their interest in the topic. Maybe the knowledge and experiences expressed could have been somehow different with participants who were not as interested in the topic. The heterogeneity of the sample was given priority, and strategic sampling was therefore used.

Another limitation is the author’s lack of native fluency in English, which may affect the accuracy of translated text. Nevertheless, the author hopes to have given the reader sufficient understanding of the essence of the research.

Conclusion

Although this study is based on perceptions and statements from a small group of nurse anesthetists, it still conveys the essential knowledge about nurse anesthetists and managers of anesthesia departments, which should be focused on when it comes to professional development and research. The result shows that production—efficiency requirements and frameworks—can be perceived as barriers to professional development. However, the anesthesia nurses’ and management’s attitudes also seem to be barrier factors, where there is an improvement potential for a better “climate.” Research has shown that a focus on professional development has a positive effect on both individual nurse anesthetists and professional development and thus on patient safety. Further research on the topic is recommended. There is a lot of professional development and research work within the general nursing profession, but nurse anesthetists are not yet on this level. It is thus important to secure more and newer knowledge about what nurse anesthetists believe is important for them to become more engaged in professional development and research beyond the scope of maintaining professional competence. In addition, it seems to be necessary to focus on how to solve the perceived competition between production pressure and requirements for professional development activity.