




DISCURSIVE ARTICLE

Operating theatre nurse specialist competence to ensure patient safety in the operating theatre: A discursive paper

Ann-Christin von Vogelsang^{1,2}  | Christine Leo Swenne³  |
Birgitta Åkesdotter Gustafsson⁴ | Karin Falk Brynhildsen⁵ 

¹Neuro Theme, Karolinska University Hospital, Stockholm, Sweden

²Department of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden

³Department of Public Health and Caring Sciences, Uppsala University, Uppsala, Sweden

⁴Department of Health Sciences, Lund University, Lund, Sweden

⁵Faculty of Medicine and Health, School of Health Sciences, Örebro University, Örebro, Sweden

Correspondence

Ann-Christin von Vogelsang, Neuro Theme, Karolinska University Hospital, Eugeniavägen 6, Carolina Tower 4th floor, SE-171 76 Stockholm, Sweden.
Email: ann-christin.von-vogelsang@ki.se

Abstract

Aim: To discuss specialist operating theatre nurses' competence in relation to the general six core competencies and patient safety.

Design: A discursive analysis of legal statutes and scientific articles.

Methods: Swedish legal statutes and an overview of scientific articles on operating theatre nursing were deductively analysed and classified into healthcare providers' general six core competencies.

Results: All healthcare professionals should possess the general core competencies, regardless of their discipline. The specific content within these competencies differs between disciplines. The specialized operating theatre nurse is the only healthcare professional having the competence to be responsible for asepsis, instrumentation, infection and complication, control and management of biological specimens during the surgical procedure. Besides operating theatre nurses, no other healthcare profession has the formal education, competence or skills to perform operating theatre nursing care in the theatre during the surgical procedure. Operating theatre nurse competence is therefore indispensable to ensure patient safety during surgery.

KEYWORDS

evidence-based practice, informatics, interdisciplinary health team, operating room nursing, patient safety, patient-centred care, quality improvement

1 | INTRODUCTION

Competency has been described in various ways; as a combination of skills, abilities and attitudes required and what a professional is able to do and is manifested in measurable actions and behaviours (Gillespie & Hamlin, 2009; Stobinski, 2008). However, the concept of competence is elusive and there is no general agreement on its definition. Clinically relevant competency is not by definition similar to the completion of education; however, an educational examination is the only widely used measurement for competency (Stobinski, 2008).

The composition of professionals in a surgical team varies between countries and their healthcare systems. In Sweden, the nurse professionals in the surgical team encompass an operating theatre (OT) nurse and a nurse anaesthetist, competent within their own specific area of expertise. The additional circulating nurse role is most commonly performed by a nurse assistant (NA) (Sandelin & Gustafsson, 2015).

The professional title of OT nurse is protected by law in Sweden and may only be used by nurses registered with the Swedish National Board of Health and Welfare holding a bachelor's degree who also

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have a postgraduate diploma in specialist OT nursing of 60 credits. To be awarded this postgraduate diploma in Sweden, the student must demonstrate the knowledge and skills required to work autonomously as a specialist OT nurse. This implies demonstrating the ability to take responsibility for asepsis and the instruments and measures to prevent infection and complications in connection with surgical interventions as well as the ability to manage biological specimens. Moreover, the student must also demonstrate specialized skills, such as:

- able to identify healthcare needs and develop care programmes autonomously and in collaboration with the patient and their significant others;
- an ability to direct and evaluate healthcare interventions
- able to initiate, undertake and evaluate preventive interventions;
- able to integrate knowledge and, also, to analyse, assess and deal with complex issues and situations; and
- to participate in or undertake examinations and treatments autonomously. (Swedish Ministry of Education & Research, 1993).

The Swedish one-year OT nursing programme consists of both theoretical courses and clinical rotation and results in both a professional title and a master's degree (Crafoord & Fagerdahl, 2017; Swedish Ministry of Education & Research, 1993).

2 | BACKGROUND

The OT nurse's specialist knowledge includes different kinds of knowledge; "know how," which includes psychomotor and procedural knowledge and skills, as well as relational and communication skills. "Know what" can be described as pattern recognition, which enables the nurse to identify specific problems. "Know who" is an understanding of meanings attached by the patient to a specific problem, what kinds of outcomes are desired and acceptable actions. This understanding is obtained through communication and establishing trust. "Know that" denotes that the nurse knows that a particular action is needed for a specific instance, signifying the nurse's understanding of the situation, his or her available skills and the patient's preferences (Oberle & Allen, 2001).

Surgical processes are a complex assemblage of inter-related factors, such as individual technical and non-technical skills in each individual in the OT team, the quality of their teamwork and the OT environment (Sevdalis et al., 2009). Bull and FitzGerald (2006) describe OT nursing as a combination of technological proficiency and person-centred care. Technology can in this context be described as an interrelationship between values that are efficiency-driven, such as equipment and science, but can also be understood as knowledge, technique and skills (Bull & FitzGerald, 2006). OT nurses' technical skills have been conceptualized incorporating two components; the deep knowledge of infection control and sterility and the application of this knowledge—how to maintain the sterility throughout a surgical procedure (Sevdalis et al., 2009). From these components, Sevdalis et al. (2009) extracted four generic core

technical skills: (a) gowning and gloving; (b) setting up instrumentation before the surgical procedure; (c) draping the patient; and (d) maintaining sterility in the sterile field throughout the procedure.

Non-technical skills complement technical skills and include cognitive, personal and social skills, which contribute to safe task performance (Mitchell & Flin, 2008; Mitchell et al., 2011). The cognitive skills comprise situation awareness (perception of elements in an environment of time and space and the comprehension of their meaning) and decision-making (selecting a required option to deal with the situation faced with). The social skills include communication, teamwork and leadership. The personal skills comprise, for instance, the ability to manage stress and cope with fatigue due to workload in the OT environment (Mitchell et al., 2011).

Operating theatre nurses operate behind closed doors in the OT, so other healthcare professionals are therefore often uncertain of the nature of OT nursing and OT nursing tasks and misinterpret OT nursing as solely being doctors' assistants (Blomberg, Bisholt, Nilsson, & Lindwall, 2015). The care organization has a medical and legal responsibility to ensure the competency of its nurses (Stobinski, 2008); however, care managers are sometimes unaware of the nature of individual nursing roles and may have insufficient knowledge about OT nursing.

For the time being, there is a shortage of OT nurses in Sweden. This deficiency results in a risk that care providers assign OT nursing tasks to other healthcare professionals (unlicensed or licensed), who lack the formal education, necessary experience and skills according to Swedish regulations. Thereby, the patient's rights to safe OT nursing care during surgery are jeopardized. The aim of this work is to discuss the specialist OT nurses' competence in relation to the six general core competencies and patient safety.

3 | METHODS

A review of Swedish legal statutes and an overview of scientific articles (Mulrow, 1987) on OT nursing were conducted. The material was deductively analysed and classified into healthcare providers' general six core competencies as described by the Institute of Medicine (IOM, 2003) and the Quality and Safety Education for Nurses standards (Cronenwett et al., 2007), presented in Table 1. Approval from a Research Ethics Committee was not required for this discursive paper.

4 | RESULTS

4.1 | Person-centred care

Person-centred care in the OT involves recognizing the patient as a person and to be addressed by name, to be taken seriously and be treated with respect and to involve the person in their own care. The patient is regarded as a unique person and care is performed in consultation with the patient (Arakelian, Swenne, Lindberg, Rudolfsson, & von Vogelsang, 2017).

TABLE 1 Description of healthcare providers' general core competencies

Person-centred care	Interdisciplinary teams	Evidence-based practice
To provide care that reflects the whole person. To identify, respect and care about patients' differences, preferences and expressed needs. To provide information and communicate with patients in a fully open manner, using a language that they understand, to enable them to make informed decisions about different aspects of care. To provide timely, tailored and expert management of symptoms, relieve fear and anxiety, and be able to anticipate patient needs through planning (IOM, 2003).	Composed of members from different professions with varied and specialized knowledge, skills and methods. An effective team has knowledge of each team member's expertise, knowledge and values. The team members integrate their expert knowledge and bodies of experience to coordinate, collaborate and communicate to optimize care. These teams need to deal with the increasing complexity of care and keep pace with the demands of new technology (IOM, 2003).	Decision-making should be based on the best available scientific and standardized knowledge, integrated with clinical expertise and patient values and preferences. Healthcare professionals need to know where and how to find the best possible sources of evidence, to evaluate the findings concerning validity and usefulness with a patient or population and determine how to integrate the findings into practice (IOM, 2003).
Quality improvements	Safe care	Informatics
To reduce inefficiency, waiting times and delays, and avoidable errors that could harm patients. This continuous work requires healthcare professionals to understand and measure the quality of care, to assess the current practices and identify opportunities for improvement. The need to formulate what they are trying to accomplish, what can result in an improvement and how the improvement can be detected and measured (IOM, 2003).	Implies having knowledge, skills and attitudes to minimize the risk of harming patients and care providers through system effectiveness, including systematic safety work and individual performance. Knowledge on causes of error, allocation of responsibility and accountability is needed, as well as skills using technology and standard practices that support safety and quality and having effective strategies to reduce risk of harming oneself or others (Cronenwett et al., 2007).	To search, retrieve, manage and make decisions using electronic data from internal and external databases, as well as to understand security protections and directly address ethical and legal issues. To enhance education and access to accurate and reliable information for patients, and act in compliance with regulatory requirements to guarantee the privacy and the confidentiality of patients (IOM, 2003). Basic competence on informatics is essential for developing the other five core competencies (Cronenwett et al., 2007).

The starting point in person-centred care is therefore the patient's narrative (Ekman et al., 2011). Because OT nurses most commonly meet the patient for the first time in the OT, they need to rely on information from the patient record (Alfredsdottir & Bjornsdottir, 2008) and must establish a relationship with the patient within the brief period before the patient is sedated or anaesthetised (Arakelian et al., 2017). In that short meeting, they need to confirm that their prior planning is consistent with the patient's problems, needs and desires (Blomberg et al., 2015). When a preoperative meeting with the patient is possible, the OT nurse's preparedness to individually tailor the patient care is enhanced (Sandelin & Gustafsson, 2015) and gives the OT nurse the opportunity to share the patient's history and can guide the patient through the operation (Rudolfsson, von Post, & Eriksson, 2007).

Operating theatre nurses strive to create a quiet, relaxed and friendly atmosphere when greeting a patient to the OT. OT nurses prepare sterile instruments and equipment before the patient enters the OT, to prevent them having sight of possibly frightening items. Communication between staff is kept to a minimum while the patient is still awake (Alfredsdottir & Bjornsdottir, 2008; Kelvered, Ohlen, & Gustafsson, 2012).

4.2 | Interdisciplinary teams

Members in the surgical team are mutually dependent on each other's unique professional skills. None of them are interchangeable without

the risk that patient safety is compromised (Gillespie, Chaboyer, Longbottom, & Wallis, 2010). An example of this was illustrated by Baylis, Adams, Allen, and Fraser (2006), who found that the incidence of complications increased if the designated theatre team was changed and the OT nurse was an unplanned replacement.

Effective communication is central in teamwork and enhances team performance, which in turn reduces risks of adverse events and increases patient safety (Gillespie & Hamlin, 2009). OT nurses have multiple roles when collaborating among the professionals in the surgical team. The first focus is on the collaboration with the surgeon, to facilitate the surgical performance and enhance the possibilities for a good outcome for the patients (Sandelin & Gustafsson, 2015). This takes careful planning and detailed preparation prior to each operation, by, for instance, scrutinizing the surgical techniques literature and discussing these with colleagues and the surgeon responsible (Kelvered et al., 2012). The advanced forward planning and preparedness for any unexpected event or error that may occur during an operation is key for the OT nurse to achieve control intraoperatively (Björn & Boström, 2008). Intraoperatively, the OT nurse continuously overviews the surgical site, follows the surgeon's technique and is one step ahead (Sandelin & Gustafsson, 2015). The OT nurse also collaborates closely with the circulating nurse (most commonly an NA). When dressed in sterile gown and gloves, the OT nurse is totally dependent on good collaboration and communication with the NA. This collaboration could be characterized as respectful and friendly leadership to guide and instruct NAs with little formal education (Sandelin & Gustafsson, 2015). The OT nurse's

collaboration with the nurse anaesthetist and the anaesthesiologist is interdependent and contributes to patient safety by engaging in continuous communication; expressing goals and planned nursing care actions before surgery and intraoperatively to be aware of possible critical situations (Sandelin & Gustafsson, 2015).

In experienced OT teams, non-verbal communication is common, for example, a discreet hand movement from the surgeon could communicate a request for a certain instrument. A simple gesture from the OT nurse could indicate a request for the NA to open a sterile package of a required item, or eye contact between the OT nurse and the nurse anaesthetist and the anaesthesiologist could communicate the patient's well-being (Sandelin & Gustafsson, 2015). However, there are different views on the quality of surgical leadership and communication in the OT. Consultant surgeons regard surgical leadership and communication as more positive than OT nurses do (Flin, Yule, McKenzie, Paterson-Brown, & Maran, 2006). OT nurses favour more debriefings pre- and postoperatively to sustain patient safety.

4.3 | Evidence-based practice

The work in a perioperative setting is often volume-based, directed to maintain a high level of "production." When healthcare is transitioning to value-based care, it is essential that OT nurses have sufficient knowledge on the local level, such as patient safety, infection prevention, environmental safety and team safety, to implement evidence-based practice (EBP) that supports effective perioperative care (Spruce, 2015).

Evidence-based practice nursing is defined by the Sigma Theta Tau international positioning statement as a process of shared decision-making between practitioner, patient and their significant others, based on research evidence, the patient's experiences and preferences, clinical expertise or know how and other available sources of robust information (Sigma Theta Tau, 2008).

Operating theatre nurses are accountable for the care they deliver and must be able to critically assess patients and the care provided, assess research and appraise the available evidence to determine whether and how the evidence can be applied to their clinical practice (Spruce, 2015). EBP allows OT nurses to inform and educate patients concerning the significance of certain care instructions, which helps to engage patients in their care (Spruce, 2015).

Employing EBP benefits healthcare in several ways; it improves patient outcomes, standardizes care and decreases patient care costs (White & Spruce, 2015). It is more cost-effective, as standardized care is based on what has shown to yield the best outcome and what works rather than historical precedence. Practising EBP gives providers confidence that they are providing the best healthcare possible to their patients (Spruce, 2015). When evidence is lacking within a nursing discipline (such as OT nursing), nursing research is conducted (Raines, 2012).

4.4 | Quality improvement

The OT nurse needs to have enough knowledge on the various instruments for performing risk assessments. To be able to view quality work from an overall perspective, the OT nurse needs knowledge of quality improvement (QI) on an organizational and health system level, such as set goals for the care of the intraoperative patient and guidelines from different professional organizations (Spruce, 2015).

The aim of QI projects is to determine whether the appropriate standards of care are reached in a specific clinical setting and in relation to an acceptable standard (Baker et al., 2014). The focus is placed on systems, at local and organizational levels and not on individuals. It is an internal procedure to cyclically evaluate work processes, which include EBP, clinical effectiveness, evidence-based clinical guidelines and audit (Rycroft-Malone et al., 2002). QI projects usually do not have theoretical underpinnings; they most commonly do not aim to generate new knowledge and are not generalizable to all settings (Baker, 2017; Cepero, 2011; Raines, 2012).

The foundation of nursing practice has three components that are closely related to each other, but with different purposes, QI, EBP and nursing research. QI aims to improve processes, EBP aims to change practice and nursing research aims to generate new knowledge (Hedges, 2006). To apply QI, knowledge concerning implementation is essential, which is defined as "methods to promote the systematic uptake of research findings and other EBPs into routine practice and, hence, to improve the quality and effectiveness of health services" (Eccles & Mittmann, 2006, p. 1). There are several different approaches in implementation science (Nilsen, 2015), whereof i-PARIHS (implementation—Promoting Action on Research Implementation in Health Services) is one of the most common in nursing to determine how the improvements can be detected and measured (Harvey & Kitson, 2016). To evaluate QI, benchmarks are most often needed, to allow the results to be compared with other entities' outcomes (Baker, 2017). OT nurses' in-depth nursing care knowledge, academic skills and an ethical approach in the perioperative context is needed to enable systematic QI.

4.5 | Safe care

The fundamentals in systematic safety work are to identify and reduce adverse events to minimize patient suffering and preventable injuries (Rutberg, Borgstedt-Risberg, Gustafson, & Unbeck, 2016). Surgical patients are exposed to several risks during surgery; risk of surgical site infection due to a planned break in skin integrity and risk of physical injury due to surgical positioning, electricity, chemicals and transfers (Rauta, Salanterä, Nivalainen, & Junttila, 2013). A large proportion of these surgical complications are avoidable, which was shown when the World Health Organization (WHO) surgical safety checklist was implemented, after which mortality was almost halved and complications were significantly reduced. The OT nurse is responsible for and verbally confirms, sterility, equipment availability,

results of needle, sponge and instruments count and the handling of specimens in the WHO checklist (Haynes et al., 2009).

There are several areas for which the OT nurse possesses special knowledge and skills and therefore has special responsibility. Such an area is the prevention of postoperative surgical site infections. The OT nurse guarantees a hygienic and aseptic environment throughout the operation by creating a safe and sterile working surface for the use of surgical instruments and by draping the patient, thus creating a barrier between the wound and surrounding microorganisms (Kelvered et al., 2012). Moreover, the OT nurse is also responsible for controlling the traffic flow in the OT (Blomberg et al., 2015). Door openings during surgery affect the air pressure in the OR, which may allow contaminated air to flow in and lead to unacceptable numbers of airborne bacteria-carrying particles and potentially result in surgical site infections (Andersson, Bergh, Karlsson, Eriksson, & Nilsson, 2012).

The collection of specimens is common during surgical procedures, aiming to verify or support the patient's diagnosis (Rauta et al., 2013). The OT nurse is responsible for handling these specimens; an error can endanger the possibility of diagnosing the patient and planning further medical treatment.

Surgical counts are another area within the OT nurse's responsibility (McGarvey, Chambers, & Boore, 2000). The OT nurse's signature in the digital operation notes is a guarantee that surgical counts and qualitative assessments of the surgical instruments have been performed before the operation starts, during the procedure before wound closure and after the operation to ensure that no material (retained foreign body) is accidentally left in the patient. Preventing retained surgical items is one of the highest priorities in patient safety issues identified by OT nurses (Steelman, Graling, & Perkhounkova, 2013).

4.6 | Informatics

QI, EBP and nursing research all require a comprehensive review of the scientific literature (Bernhofer, 2015), thus needing the core competence of an ability to use informatics. The OT nurse uses electronic-based patient record systems as well as databases to plan the perioperative care of the patient, based on technical and non-technical skills (Flin, Mitchell, & McLeod, 2014; Sevdalis et al., 2009). The OT nurse documentation in the patient record underpins patient-safe care and enables patient participation in their own care (Ekman et al., 2011), such as surgery-specific issues that directly affect patient safety, representing information provided to caregivers and the patient and for monitoring, regulatory and legal requirements. They are also responsible for documenting the operation-specific nursing care, that is, planned and performed nursing activities such as positioning, assessment of skin status before and immediately after surgical procedures, skin preparation and draping, surgical equipment and materials used, including implants, to ensure traceability (Swedish Institute of Standards, 2019). The documentation is also

one of the prerequisites for perioperative research and QI (Westra & Peterson, 2016), such as root cause analysis (Bagian et al., 2001).

Other areas of informatics in OT nursing include computerized educational tools in perioperative nursing, which facilitate updating in the field of knowledge and include information on, for example, how to implement evidenced-based practices (Byrne, 2011), new advances in technical skills (Sweeney, 2010) and interactive training system for educating OT nurse students (Glaser et al., 2016).

5 | DISCUSSION

All healthcare professionals should possess the general core competencies, regardless of their discipline (IOM, 2003). However, the specific content within these competencies differs between disciplines. The specialized OT nurse is the only healthcare professional who has the competence to be responsible for asepsis, instrumentation, infection and complication control and the management of biological specimens during the surgical procedure.

Nursing care is often positioned as being independent of illness and medical treatment.

Nursing care requires knowledge, not only of human normal functions, but also general knowledge of the current disease and its treatment. This knowledge is obtained through completing formal education to become a registered nurse with a bachelor's degree (Crafoord & Fagerdahl, 2017; Gillespie & Hamlin, 2009), but it is not enough for working in the OT department as an OT nurse. Specific nursing fields, which in this case means specializing in OT nursing and perioperative nursing (Tollerud, Botsford, Hoglan, Price, & Sawyer, 1985), focus on a deeper understanding of anatomy, physiology, the current disease and the surgical procedure and the six core competencies in the OT nursing context. This is important to provide good and safe care for the patient during the surgical procedure. Considering all the challenges it brings for the patient, being anesthetized and going through a surgical procedure, this specialized knowledge is essential. To identify risk factors and needs preoperatively in the short meeting with the patient before he or she is anesthetized, the OT nurse must have holistic knowledge and a deeper understanding of the care of the surgical patient and the operating room environment.

However, being an OT nurse does not only require formal knowledge of the physiological, psychological, spiritual and ethical needs of the patient, which also may be referred to as non-technical skills (Sorensen, Olsen, Tewes, & Uhrenfeldt, 2014). It also requires formal technical knowledge about devices, instruments and sterilization procedures used in a surgical department and safety considerations to avoid harming the patient. The OT nurse profession includes knowledge of perioperative nursing (non-technical skills), technical skills and training in complex practical performances and processes. It is obvious that this complex vocational role requires an in-depth knowledge to be able to exercise the profession in a patient-safe manner. It is therefore essential to have a postgraduate diploma in

specialist OT to obtain an understanding of the whole human being in the perioperative context (Crafoord & Fagerdahl, 2017).

To strengthen the foundation of nursing practice and improve patient care, nurses must monitor their practice and patient outcomes (apply QI), systematically review the evidence (employ EBP) and perform nursing research (Hedges, 2006). Lack of informatic skills is a barrier to adopting EBP and QI (Solomons & Spross, 2011). The IOM (2003) describes how institutions must include this core competency in all health professions curricula. Aligned with this, only licensed health professionals in Sweden have the competence to seek evidence from scientific databases. However, when seeking scientific evidence, most of the existing research is discipline-specific (IOM, 2003), indicating that no other licensed or unlicensed health profession but OT nurses have the competence to employ QI and EBP to improve OT nursing.

5.1 | OT nurses merge non-technical and technical skills for safe teamwork and patient safety

To enhance safe care and to reduce adverse events, it is essential that both technical and non-technical skills are performed in the OT (Mitchell et al., 2011). Safe care in the OT is dependent on mutual understanding of specific concepts in communication among everyone in the team (Chrichton, 2017). Communication in surgical teams affects safety in surgery, and a misunderstanding may put the patient's life at stake. It is comparable to the specific demands of the communication between the members of the crew in the cockpit of an aircraft, where the safety of the passengers may be at stake, or in a nuclear plant, where a communication error may lead to a life-threatening situation for the population (Chrichton, 2017). It is easy to understand that such workplaces require competent professionals capable of communicating in a safe mode using words explicitly understood by everyone in the team for safety and to avoid fatal errors.

Operating theatre nurses ensure that patients receive person-centred perioperative nursing care during surgery in cooperation with the surgeon and the others in the surgical team (Arakelian et al., 2017). The ability to understand the patients' needs in every different situation during the surgical intervention therefore calls for a skilled professional OT nurse (Gillespie, Harbeck, Falk-Brynhildsen, Nilsson, & Jaensson, 2018; Sandelin & Gustafsson, 2015; Sorensen et al., 2014). They can therefore not be replaced by anyone without this competence, for example, by a graduate nurse or an NA.

Control of hygiene and asepsis is of utmost importance in the OT to prevent postoperative wound infections (Liu et al., 2018; Roesler, Halowell, Elias, & Peters, 2010).

A major focus of OT nurses' field of professional technical skills concerns infection control (Sevdalis et al., 2009) and they hold a major responsibility in ensuring strict asepsis and hygiene during the patient's surgery to prevent surgical site infections (Aholakko, 2011). Hazards in everyday care are prevented, such as performing the wrong procedure with the patient, in the wrong site, or even the

wrong patient. They also prevent the risk of retained surgical items, medical errors and failures in instrument reprocessing (Steelman et al., 2013). The continual development of new high-tech equipment, such as surgical robots, seems to require even more caring skills of the OT nurse to prevent injuries related to the equipment (Sutton, Link, & Makic, 2013).

This discursive paper has some limitations that should be addressed. Firstly, Swedish OT nurses may have a higher educational level than OT nurses in other countries. All arguments are therefore not transferable to other countries. Secondly, the literature review was not systematically conducted; thus, there may be several relevant articles that we have missed. A strength is the authors' great competence in the area; all authors are specialized OT nurses (equivalent to CNOR) and have several years of clinical experience, all have a PhD degree and all are/have been senior lecturers, as well as having experience as course directors and examiners in OT nursing programmes and courses at advanced educational level. Moreover, the authors represent universities in four regions of Sweden.

6 | CONCLUSION

Besides OR nurses, no other healthcare profession has the formal education, competence or skills to perform OT nursing care in the OT. OT nurse competence is therefore indispensable to ensure patient safety during surgery.

7 | RELEVANCE TO CLINICAL PRACTICE

Hospitals are resource-constrained, surgical services are often volume-based and a high level of production is required to be cost-efficient, regardless if there is an OT nursing shortage. OT nurses' competencies are to a large extent unknown to healthcare professionals without access to the locked surgical suite. This discursive paper describes the full competence of OT nurses and how OT nursing impact patient safety in the OT. A description of the complex role and nature of OT nursing may prevent care managers from shifting OT nursing tasks to other healthcare professionals without formal education, necessary experience and skills. Moreover, formulating the specialized OT nursing competence may also strengthen and encourage OT nurses in their daily clinical work and maintain the further development of safe care.

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CONFLICT OF INTEREST

The authors declare that the manuscript content was composed in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

AUTHOR CONTRIBUTIONS

All persons entitled to authorship are listed as authors. All authors have agreed on the final version of the manuscript and meet all criteria for authorship formulated by ICMJE: <http://icmje.org/recommendations/>

- substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work;
- drafting the work or revising it critically for important intellectual content;
- final approval of the version to be published;
- agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

ORCID

Ann-Christin von Vogelsang  <https://orcid.org/0000-0002-3006-2443>

Christine Leo Swenne  <https://orcid.org/0000-0001-8109-179X>

Karin Falk Brynhildsen  <https://orcid.org/0000-0001-7862-3652>

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