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A CANADIAN EDUCATOR PERSPECTIVE ON QUALITY PERIOPERATIVE NURSING PRACTICE

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ABSTRACT:

The Perioperative Registered Nurse (PRN) is an essential member of the interdisciplinary surgical team in operating rooms (OR) across Canada. PRNs working in this area need to, given the increased risk of hospital adverse events in the perioperative environment, support and uphold established perioperative nursing principles, guidelines, and standards to protect patients and improve the culture of the environment. This paper is an educator's exploration of some of the factors that currently influence the ability to deliver quality perioperative nursing care in Canada. Factors such as perioperative education, operating room culture and communication, Canadian perioperative certification, Operating Room Nurses Association of Canada (ORNAC) standards, and the role of senior leadership and administration is examined in detail. Potential strategies and areas for future research, to uphold and maintain quality practice, are identified.

INTRODUCTION

The operating room (OR) environment is a dynamic and, at times, chaotic clinical area that places a high value on the technical skills and abilities of the entire team, strict aseptic technique, and adherence to protocols.[1] Contextual stressors, such as communication breakdowns, procedural challenges, combinations of various professionals working together, and the hierarchical nature of the operating room team, have a strong influence on the workplace culture.[2] A systematic review of the literature found that the majority of hospital adverse events occurred in the operating room[3] emphasizing the importance of strong communication between team members.[2,4,5] Surgical "never events," such as retained foreign objects (RFO) and wrong site-wrong sided surgery, can have catastrophic outcomes for patients.[5-7] Surgical "never events" have been identified as highly preventable and are a concern not only to the surgical patients but also to the entire surgical team and the healthcare organizations where patient care delivery occurs.[6,7]

The World Health Organization (WHO) defines patient safety as "the absence of preventable harm to a patient during the process of health care."[8] The WHO has been a leader in encouraging perioperative teams to communicate and participate in safety procedures. Safe patient care is reliant on strong

communication and effective teamwork within the operating teams consisting of surgeons, anesthesiologists, and perioperative nurses.[2,9] Nurses working in this area need to support and uphold established perioperative nursing principles, guidelines, and standards to protect patients and improve the culture of the practice environment. Nurses, as patient advocates, must promote patient safety by partnering with physicians and healthcare organizations to improve practice environments and health systems.[10,11] This paper is an exploration of the role of the perioperative RN. Factors that currently influence the ability to deliver and support quality perioperative nursing education and practice in Canada, which translates to the provision of safe patient care, will also be discussed. This paper offers, in essence, a call to action for perioperative nursing with possible strategies and areas for future research to uphold and maintain a quality perioperative-nursing practice.

Perioperative Registered Nurses (PRNs) function similarly to other RNs, however, they possess a unique theory and clinical skill-set specific to the perioperative environment.[12] With only moments to create relationships with their patients the need for patient advocacy and safety remain essential tenets of this specialized nursing practice.[5,13] PRNs deliver quality perioperative nursing care both separately and in conjunction with the surgeons and anaesthesiologists.[14]Often, at critical moments during patient care, communication difficulties may arise related to psychological factors such as stress, professional values, and organizational pressures.[1,6,15] Although boundaries and hierarchies continue to exist between professions, the needs of our surgical patients, and their families, should be shared by the team. Healthcare professionals must look beyond the hierarchies and professional boundaries when seeking excellence in patient care.[16]

PRNs deliver quality perioperative nursing care both separately and in conjunction with the surgeons and anaesthesiologists.[14]

PRNs, like other members of the operating room team, can, at times, be pulled into technical work-around efficiencies that do not adhere to organizational policy, thus compromising or migrating away from standards of care into unsafe practices.[6,15] Inter- and intra-professional inconsistencies, such as varying degrees of education, experience, varied perioperative educational preparations, and differing perceptions of standards of practice in the operating room, can lead to a lack of cohesiveness and miscommunication during patient care.

Factors that Influence Quality Perioperative Nursing Practice

Education and Practice:

Before the 1980s student nurses in hospital-based nursing programs were able to rotate through perioperative clinical environments or ask to pursue a senior clinical placement in the OR.[17] At that time nurse educators used a variety of educational delivery methods. Rudimentary nursing education curriculum offered perioperative theory followed by "learning on the job" with a mentor. Practice guidance and standards of care were vastly dependent on the hospital policies and procedures as well as on the practice of the nursing mentor or preceptor. With the evolution of nursing education, from hospital-based diploma nursing programs to undergraduate nursing programs in academic institutions, the awareness, exposure, and promotion of the perioperative nursing specialty became limited.[18-20] The shift in nursing education may have negatively influenced nursing practice in ORs as it resulted in less presence, in the clinical environment, by nursing faculty and instructors.

Wilson and Johnson link postgraduate certification in perioperative nursing to positive impacts and consider certification a worthy investment for nurses and organizations.[21] In Canada there are eight Operating Room Nurses Association of Canada (ORNAC) accredited perioperative postgraduate programs. Program entrance requirements, length, and delivery models vary with offerings in both

traditional classroom and online e-learning formats. The perioperative programs, although comprehensive and aligned with the ORNAC standards and perioperative theory, may have significant time commitments and costs associated with them. This may be viewed as a deterrent to the independent RN pursuing advanced perioperative specialty education, as a higher level of education does not necessarily equate to a higher level of salary. While healthcare industry (hospital) sponsored nursing specialty education programs are more economical for the individual RN these programs result in a cost to the healthcare system which is not always available in current healthcare budgets. Unfortunately these programs do not come with a guarantee that the RN will remain in the specialty program or organization.

American published reports related to the cost to hospitals for perioperative nursing recruitment, training, and orientation range from $22,000-64,000 USD.[17,18] Orientation costs for nursing, in general, is estimated as $65,000-75,000 per nurse, and even higher in areas such as the OR and Intensive Care Unit.[22] Some organizations may see the extensive costs associated with perioperative education, when combined with orientation costs that are already higher than average, as a barrier if there is a potential risk for loss on investment as a result of attrition.

Accredited perioperative nursing education can be affected by geographical location, size of hospital, and level of surgical services available to the perioperative program. Factors such as perioperative curriculum requirements of academic partners may misalign with the healthcare facility's surgical services care model, which can challenge successful attainment of criteria. For example, the perioperative curriculum may identify scrubbing and circulating for paediatric patients however the facility may not provide paediatric surgery services. In contrast to medical colleagues, who are required to relocate to large urban academic teaching hospitals to complete residencies and fellowships, specialty-nursing education is, at times adapted and modified based on the hospital site. While the total volume of RNs, in relation to medical colleagues, is a factor in comparison of curriculum planning the author felt it was worthy to note. When assessing the quality of perioperative nursing education in Canada, geographical location of PRNs is a subject of its own and requires further examination in order to assess and understand the consistency of of nursing education.

There are RNs and hospitals in Canada that have sought perioperative education support through the American-based Association of periOperative Nurses' (AORN) distance education course.[23] The AORN perioperative distance education appears, to this author, to provide a comprehensive perioperative theory delivery and evaluation with less financial commitment, for the nurses and the healthcare organization, when compared with ORNAC accredited

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perioperative education. What remains unclear is how to apply knowledge translation of the American-based theory within the Canadian healthcare system and at what point, during the education, the novice PRN becomes engaged in Canadian perioperative standards and practice. The ability to facilitate consistent and comprehensive perioperative simulation and clinical rotations in multiple sites, without an academic partnership for support needs further exploration and evaluation.

Given that RNs represent three-quarters of regulated nurses, and encompass the largest segment of healthcare providers in Canada,[24] the cost of sustainable, high quality, post-graduate education in nursing may be an interesting trend to assess in the future. If patient safety and positive patient outcomes are essential objectives in the Canadian healthcare system, nurse educators should identify and discuss the connection between these factors and quality nursing postgraduate education. As the potential for adverse events in ORs is a risk and concern,[2-5] the communities of perioperative nursing, academia, and healthcare organizations need to pause and reassess the importance of quality perioperative nursing education and how this valuable education can be supported.

A large multi-site study on patient outcomes related to education, conducted by Kendall-Gallagher et al.[25], while not specifically assessing perioperative-nursing education, found that experience alone did not substitute for education, or specialization, in relation to patient outcomes. In a much smaller study, with a focus on perioperative nursing education and experience, Gillespie et al.[26] identifies that while clinical experience has value, education is also part of the competency factor.

Operating Room Communication and Culture:

In recent decades researchers have identified team communication through shared understandings as a fundamental concept in the establishment of high-performance teams in the OR.[2] While other clinical areas have chosen to abandon hierarchies, and move into a philosophy of interdisciplinary teams, the OR continues to retain the pyramidal, multi-professional system.[2] OR teams consist of a diverse group of professionals with varied education, training, and skills. The teams' diverse qualities must collectively and seamlessly converge, to encourage safe patient care, when the patient is on the OR table.

Hierarchies in healthcare, and the effect on workplace culture, are discussed frequently in the literature.[1,2,7,27] There have been reports that communication challenges within the inter-professional relationships exist in ORs.[1,28,45] The perioperative environment is a high-paced clinical environment where all team members place high value on key attributes such as theoretical knowledge, clinical competence, and technical skills.[1,29]

The OR culture may have been, and continue to be, a factor that influences perioperative nursing practice.[1] Perioperative nursing has been identified as one of the oldest nursing specialties in existence.[30-33] In fact, before the turn of the 20th century, Wade suggests that the pursuance of perioperative nursing was a prestigious invitation-only offering, based solely on a student nurses' technical skills and abilities.[33] Even though the profession of perioperative nursing was innovative in developing as the first nursing specialty, attesting the practice as authentic nursing has been a journey. The belief that OR nurses lacked independent knowledge and practice has also, at times, isolated the specialty from the significant professional growth in comparison to our other nursing colleagues.[31,33] This isolation may have further supported a discourse on the professional insecurity of the perioperative nurse.[31,33] Riley and Manias[31] referred to "professional identity challenges endured by perioperative nurses as they have moved past the image of a handmaiden to a professional healthcare provider". The PRN now serves as a patient safety

A culture of silence has a historical significance in the OR...

advocate, with the ability to holistically predict, assess, react, and respond to dynamic patient conditions.[31]

A culture of silence has a historical significance in the OR as it provided surgeons with a quiet environment and helped ensure all members were fully focused on the procedure.[27] The expectation on PRNs to perceive, anticipate, and respond quickly in a silent culture is somewhat of a paradox to the culture of strong and effective team communication supported by the literature today. To use a familiar example, a surgeon has been, and perhaps continues to be, traditionally seen to place value on a PRN who possesses a 'quiet competence' by anticipating procedural steps without verbal communication.[27] A culture that respects anticipatory skills in a quiet context may affect acceptance of the novice PRN who may not have yet had time to build this skill or who may have been trained to speak assertively when patient care clarification is required. Maintaining the traditional "quiet competence" of perioperative nursing can be a challenge when music is often present in the ORs, as well as multiple professionals (residents, fellows, and other nursing and allied health students) attend either to participate in the surgery or gain valuable learning experience. In addition, working with multiple surgeons who are knowledgeable and skilled in specific specialties can be extremely challenging for the generalist perioperative nurse who works in all theaters.

Gardezi et al.[27] suggest the need to examine "silences," within the OR, in order to improve inter-professional communication and collaboration. Surgical culture maintains hierarchy and power within teams and may not appreciate professionals with perceived less power such as PRNs.[1,2,34] We need to examine the overt and covert behaviors demonstrated by those with less power in relation to patient safety.[31] In a study examining silence, power, and communication in the OR, the absence of communication was seen to occur in response to fear and a reluctance to clarify, at the risk of being perceived as incompetent or being judged as less knowledgeable than other team members.[27] This could also explain why perioperative nurses have cited that team communication issues were the highest contributor to near misses in ORs.[35] To encourage effective team communication OR teams have implemented surgical safety checklists and it is now standard practice and considered a crucial element in surgical patient safety.[9] Inter-professional protocols, such as checklists, encourage appropriate communication and may foster confidence and competence within teams.

Communication, collaboration, and respect within teams can improve patient safety and quality care in perioperative environments.[6,7,14,27] Perioperative nurses should, with this correlation having been identified, be encouraged and supported to be leaders in creating an OR environment built on inter-professional respect and strong communication among team members. PRNs need to identify and recognize their knowledge and move forward by communicating their standards of practice, and the rationale for practice. This will result in quality practice that can enhance patient safety and patient outcomes.

Perioperative nursing theory and practice is evolving with a continued focus on theoretical knowledge (as applied in clinical settings), patient safety, and quality care. We can improve inter-professional collaboration by raising other team members' awareness of the specific roles and responsibilities, of the PRN, as this helps increase collegiality, and promotes team cohesiveness.[16] The extent of professional awareness, by all members of the inter-professional team, regarding the education and ongoing continuing education assumed by professional PRNs may help the culture of the operating room. Lack of this insight, into the professional culture of others, has been identified as a factor that impacts patient safety.[16,35] Future research on how operating room culture

influences patient safety and quality perioperative healthcare may be beneficial to all.

Standards of Practice: ORNAC Standards

The first edition of the ORNAC Recommended Standards for Operating Room Nursing Practice (ORNAC Standards),[37] was released in 1986. The ORNAC Standards is a comprehensive document that serves as a resource and reference for PRNs and healthcare facilities caring for the perioperative patient.[37] Standards of perioperative care is outlined and organized into sections related to perioperative professional standards and competencies, infection prevention and control, phases of care, risk management and occupational safety, and exceptional clinical events in the OR.[12] Within the standards PRNs will find comprehensive clinical guidelines on which to base sound clinical reasoning and judgment and, thereby, guide practice and decision making to mitigate risks associated with surgical care.[12] Standards, with accompanying rationales, for the avoidance of "never events" in surgery are clearly and comprehensively outlined and referenced in the standards.[12]

Inter-professional team members and healthcare facilities are collectively committed to reducing or eliminating surgical sentinel "never events". Situations where hierarchies and differing clinical practice standards of the various team members collide are paradoxical to a safety culture.[1,2] ORNAC standards and practice may create challenges and differences of opinion between team members. These challenges may lead to workarounds (safe and unsafe), practice migrations, and violations that may increase the potential for unsafe practice to occur.[6,15] Safe verses unsafe workarounds in the perioperative environment have not been identified to date.

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With the recent shift of healthcare delivery toward evidence-informed practice standards, various perioperative team members are engaging, critically analyzing, and evaluating evidence-based practice. Perioperative nurses are, in the same fashion as the medical community, trying to move past the philosophy of continuing to do what was always done and to move in to a practice based on what is the best standard of care as informed by the evidence and information made available to the profession.

The validity of perioperative nursing standards in Canada have, on occasion, come under intense scrutiny, during inter-professional differences of opinion, in terms of the level and quality of evidence supporting the ORNAC standards. ORNAC has taken this concern seriously and a lengthy and robust evidence-based validation process has been underway since 2013. ORNAC's ongoing mandate is to be a strong voice in supporting and upholding quality perioperative nursing practice in Canada.

CNA Certification

Canadian Nurses Association certification may also be a factor influencing quality perioperative nursing practice. Nursing certification has been identified as an important link in patient safety, and a method of improving patient outcomes, although further research in perioperative nursing is needed[38,39]. Boyle et al.[38] identify that certification is a professional endeavour for nurses to align their practice with standards of excellence identified by the specialty nursing group. Certification has also been suggested as a possible mechanism to improve patient care based on the premise that it guides perioperative nurses to engage in life-long learning in a rapidly changing clinical practice environment.[39,40] Schroeter et al.[40] surveyed a group of certified perioperative nurses and found the process of certification had enhanced both professional practice, in terms of knowledge, and respect among colleagues as well as resulting in increased self-confidence and pride. Currently, there are 1,471 Registered Nurses in Canada certified in perioperative nursing (CPN(C)

designation) and it is ranked fourth in nursing certifications.[41]

Reports by Canadian Institute of Health Information (CIHI) indicate there were 13,368 RNs in Canada who identified perioperative/perianesthesia as their area of responsibility and jurisdiction in 2015 (statistics specific to only perioperative are not available).[42] The Canadian Nurses Association specifies the numbers of RNs who maintained certification in 2015 in perioperative and perianesthesia to be 1471 and 126 respectively.[43] The fact that certification rates in Canada for the combined specialties are estimated at 12% leading to the conclusion that many RNs are working in the specialty without certification. This issue deserves further exploration.

Senior Administration and Clinical Leadership

Leadership at every level is essential to guiding a culture of safety that contributes to supporting a positive culture in the OR.[2,6,44] In fact, strong executive leadership needs to flow both literally and figuratively behind the closed doors of the theaters, where surgical adverse events tend to originate.[2,27] The organizational culture can support the inter-professional team's performance by demonstrating open dialogue and clarity of expectations as a role model for cultural tone.[2,15,27]

Organizations are responsible for creating and sustaining a positive workplace where high-functioning teams work collaboratively within a culture of safety.[6] A culture of safety is evident when inter-professional procedures and protocols, such as the surgical safety checklist, are not optional but are a requirement for all members of the team. This culture is reinforced when policies and procedures identify how inter-professional teams and leadership maintain a reciprocal open and transparent relationship.[27] Organizational leaders need to recognize

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that building a culture of safety is an opportunity for the organization to bring the inter-professional teams together in the development of a shared model that may improve teamwork and patient outcomes.[45] High functioning teams that perpetuate a supportive cultural environment can result in a positive workplace which, in turn, leads to high-quality perioperative care and positive patient outcomes.

Further Research

Fundamental perioperative nursing education deserves further investigation to offer a broader understanding of the relationship between perioperative education and quality perioperative nursing practice. Perhaps joint research endeavors by the existing ORNAC accredited academic programs, with their affiliated clinical agencies, might provide the setting and sample size required to understand the benefit of, and identify challenges involved in obtaining, perioperative nursing education. An exploration of the relationship of education to both competency and confidence, within the continuum of novice to expert perioperative nurses, would also be beneficial in determining the models of education for future reference and planning.

Currently, there are a total of 1,597 RNs with perioperative and/or perianesthesia certification in Canada and 13,368 nurses claiming to work in the specialties of perioperative/ perianesthesia.[42,43] A study that will focus on the perspectives and beliefs of PRNs in relation to perioperative nursing certification may be the first step to help understand how we can support and encourage more PRNs to obtain certification. The relationship between perioperative certification and patient outcomes also deserves further exploration, and research, in order to evaluate possible opportunities to increase patient safety.

Qualitative Research projects, using ethnography, phenomenology, grounded theory, and mixed methods, would be beneficial in understanding additional issues and challenges facing perioperative nurses in Canada. Evidence is not available, for example, on how perioperative nurses with conflicting opinions on standards of care and practice manage in the clinical settings nor is there research to support if patient care is compromised by this conflict. Further understanding of how inter-professional teams, working in the OR, value the various team members is needed in order to understand if a relationship between organizational culture and patient outcomes exists. An awareness of cultural, political, and gender biases that may influence maintaining and upholding quality perioperative nursing practice would be helpful when effecting quality improvement changes.

Opportunities may exist to work with healthcare facilities to determine a database of "never-events" in surgery in order to monitor how perioperative nursing standards impact on patient safety. Researchers should further investigate the relationship between perioperative adverse events and the adherence to, or failure to adhere to, the ORNAC standards. Dissemination of the results would be beneficial for the national perioperative nursing community and at national surgical and anaesthesia conferences. Investigations, clinical papers, and presentations may bring the professions of surgery, anaesthesia, and perioperative nursing together in the name of patient safety and quality healthcare.

STRATEGIES GOING FORWARD

Perioperative nursing education and quality practice

Educators and leaders of academic and hospital-based perioperative programs need to collectively remain engaged and intent on developing highly qualified and competent PRNs. Formative and summative program evaluation and current accreditation of curriculum should be maintained and supported to ensure the current trends of

perioperative nursing education and training in Canada are understood. Collaborative programs, involving ORNAC, CNA, and academic partners to deliver a comprehensive standardized assessment on completion of the postgraduate program, might further promote consistent perioperative nursing theory and practice. Clinical exposure in tertiary and community teaching hospitals should be offered to ensure quality clinical experiences are available.

Instructors, educators, preceptors, mentors, and coaches, as well as managers and senior organizational and nursing leadership, with a shared vision of quality perioperative nursing practice can facilitate consistency in education and clinical practice. Perioperative nursing education programs should invest in methods to deliver evidence-informed education to nurses who endeavour to teach, precept, mentor, and coach students and novice nurses to ensure supportive learning practice environments are in place. Strong partnerships between academic and healthcare facilities will encourage consistency and quality in perioperative nursing education.

Inter-professional Collaboration

Reciprocal education and collaboration between perioperative nurses, surgeons, and anaesthesiologists may improve the culture and awareness and converge the inter-professional team toward a collective approach to patient safety activities. Teamwork and shared learning, through learning practice communities, where nurses and other members of the team collectively engage in, implement, and evaluate best practice, may be a strategy to investigate further.[32] The power of collaborative education shared between nursing, surgery, and anaesthesia could strengthen joint patient safety initiatives as well as fostering a positive workplace environment.

Perioperative nurses need to work across profession-specific boundaries and submit abstracts to attend and present research findings at conferences for the Canadian Anesthesiologists' Society and at Canadian surgical specialty conferences. Respectful, meaningful, and effective team behaviour will be essential for collaborative efforts to build, and sustain, a culture of safety in operating rooms.[7,34] Inter-professional trust and a belief in the knowledge and competence of team members should be a goal for surgical teams to move toward in building a positive safety culture in the operating room.[14] Creating a culture of trust takes collaborative communication, time, and leadership, but the benefits to workplace culture and improved patient safety and workplace culture can be worth the investment.

CONCLUSION

Quality, safety, and positive outcomes are universal concerns for patients, their families, healthcare professionals, healthcare organizations, and government agencies. Surgical patients trust and expect all members of the inter-professional team to provide the best evidence-based care available.

Inter- and intra-professional inconsistencies, such as varying degrees of experience, varied perioperative educational preparations, and differing perceptions of standards of practice in the operating room, can lead to a lack of cohesiveness and miscommunication during patient care. Further research examining factors that influence a Canadian PRN's ability to deliver high quality, safe, perioperative-nursing care to surgical patients will be beneficial to the profession and to patient safety.

Whether teaching, mentoring, coaching, or practicing, PRNs have a professional and ethical responsibility to support and engage in quality perioperative nursing practice. Given the identified risk for adverse events in surgery PRNs need to recognize and further investigate how to attain, and sustain, quality perioperative nursing education and practice.

To sustain the value of PRNs in the healthcare system, a collective calling to advocate for consistent educational

preparation and to maintain a continuous life-long connection with quality standards of care seems essential. The day to day duty and responsibility to advocate and engage in quality perioperative nursing practice, while challenging, rests with each individual PRN. PRNs must be proud of the knowledge and skill set they possess, put this knowledge in to action, and share it with patients, their families, and their teams, to promote safe patient care and positive patient outcomes.

ORNAC Standards pertaining to this article topic can be found in the *Operating Room Nurses Association of Canada (ORNAC) Standards for Perioperative Registered Nursing Practice* (13th edition, April 2017). Section 1, p. 39, Standards 1.1.16 and 1.2.15; Section 2, p. 156, Standard 2.1.6; Section 4.8, p.384 - 386, Standards 4.8.1, 4.8.2.; Section 4.9 p.386-388, Standards 4.9.1, 4.9.2.

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