



The Canadian Journal of Critical Care Nursing

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Volume 35, Number 3, Winter 2024

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CANADIAN
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NURSES



Canadian Association of Critical Care Nurses

Vision statement

All critical care nurses provide the highest standard of patient- and family-centred care through an engaging, vibrant, educated and research-driven specialized community.

Mission statement

We engage and inform Canadian critical care nurses through scholarship, education, and networking providing a strong unified national identity.

Values and beliefs statement

Our core values and beliefs:

- Excellence and Leadership
 - Collaboration and partnership
 - Pursuing excellence in education, research, and practice
- Dignity and Humanity
 - Respectful, healing, and humane critical care environments
 - Combining compassion and technology to advocate and promote excellence
- Integrity and Honesty
 - Accountability and the courage to speak up for our beliefs
 - Promoting open and honest relationships

Pathways to success

1. Leadership:

- Lead collaborative teams in critical care interprofessional initiatives
- Develop, revise, and evaluate CACCN Standards of Care and Position Statements
- Develop a political advocacy plan



2. Education:

- Provision of excellence in education
- Advocate for critical care certification

3. Communication and Partnership:

- Networking with our critical care colleagues
- Enhancement and expansion of communication with our members

4. Research:

- Encouraging, supporting, facilitating to advance the field of critical care

5. Membership:

- Strive for a steady and continued increase in CACCN membership

From the Editor

Flying home from the Canadian Critical Care Nursing Conference, 2024, held in Regina, SK, from September 23–25, 2024, I reflected on the past few days! Coordinated by Caroline Penner, CACCN Director, the committee organized a conference that provided learning, networking, health and well-being opportunities, and space to reflect on our practice. I left inspired!

Meg Sopher, a professional speaker, comedienne, and operating room nurse, started the conference with laughter and humility. I am sure we all took away something individual and unique from each presentation and keynote speaker. This was my takeaway from Meg. I have days when I am overwhelmed by my “to-do” list, as I am sure many of you are. We are constantly pulled in so many different directions, wearing many hats. Meg Sopher reminded me to change my thinking patterns from “I have to...” to “I get to...” guiding me to a place of gratitude instead of dread. I have been putting this into practice since the conference when I feel challenged and when I need to redirect my thoughts. Energy flows where focus goes!

I was humbled by the stories shared about organ donation. From Michael Hamilton’s documentary about Dylan Kalambay and his journey to varsity basketball, Everad Tilokee’s story of receiving a heart transplant, Dr. Aimee Sarti’s professional dedication to caring for families experiencing loss and grief, the donor family’s experience of loss and moving forward, and all the nurses who shared their experiences about organ donation touched me on the level of a parent, nurse, and human being. Sitting in my emotions in the Trentino room, I remember thinking, “I get to... be moved by their lived experiences.”

The networking that occurred organically during sessions and at organized social events was empowering. I had the pleasure of meeting many amazing people, but two remarkable newer-ish (yet wise beyond their years) critical care nurses stood out. Their passion and desire to make their working environments safer, solidify their knowledge, and care for patients and their families motivates me to improve the profession for them. Watching Teddie Tanguay receive the CACCN Life Member Award for her outstanding contributions to the profession and the CACCN was an honour. There was much to be learned from novice and experienced nurses alike, but what was apparent throughout the three days was the passion critical care nurses have for their work, profession, and their support for one another.

The sessions were diverse and educational. Each one taught me something new. When I reviewed the conference brochure, the depth and breadth of knowledge from presenters only strengthened the likely takeaways from each session. It will be exciting to witness how the profession will continue to advance.

I recognize that not all CACCN members could attend the conference. The Editorial Management Team of the CJCCN encourages all presenters to submit a manuscript covering the topic of their presentations. By submitting a manuscript of your presentation, all CACCN members will benefit from the knowledge shared over three days. We look forward to receiving your contributions.

In the words of the conference theme, Re-imagine, Re-define, and Re-inspire.

**All my best,
Kara Sealock**



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Cardiovascular
Nurses

Conseil canadien
des infirmières et
infirmiers en soins
cardiovasculaires

and



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**Canadian Journal of Cardiovascular Nursing (CJCN) &
Canadian Journal of Critical Care Nursing (CJCCN)
continue to invite submissions for a
special collaborative theme issue:**

Cardiovascular & Critical Care Nursing: Connections to Care

The CJCN & CJCCN are pleased to announce the extension of the deadline for the call for papers for a special collaborative theme issue on cardiovascular and critical care nursing has been extended.

We invite researchers, clinicians, educators, and administrators to consider submitting short reports on novel research projects, clinical/practice, education, or administrative-related topics related to cardiovascular and critical care.

Deadline for submissions: January 31, 2025.

Criteria for all submissions:

1. Page limit: max 15 double-spaced pages [including title page].
2. Abstract: max 200 words; APA 7th ed. style

For all other submission criteria, follow the Author Guidelines for the CJCN (<https://cccn.ca/journal/author-guidelines>) or CJCCN (<https://cjccn.ca/aim-scope-guidelines-for-authors/>) for research/non-research papers (note: specify which guidelines were followed in the cover letter).

Potential topic areas common to cardiovascular and critical care nurses include:

- Case reports
- QA projects
- Advanced cardiac assessment
- Advanced/novel arrhythmias?
- Advanced organ support
- Support/initiatives for inclusion of family
- Specific initiatives or research directed toward care of diverse populations
- Novel models of care across the continuum

*Please direct queries/submissions to Dr. Kara Sealock, Chief Editor at cjccneditor@caccn.ca with a copy to CACCN National Office at caccn@caccn.ca



The Canadian Journal of Critical Care Nursing

CALL FOR MEMBERS CJCCN Editorial Advisory Board

Deadline:
January 31, 2025 @ 1600 hrs Eastern Time

The Canadian Journal of Critical Care Nursing is seeking **two to three** interested CACCN members for the **CJCCN Editorial Advisory Board**.

Process

1. The Editorial Advisory Board will include 3–6 members.
2. Editorial Advisory Board (EAB) members will be solicited by the Chief Editor through a call for interest.
3. The Editorial Management Team will review the applicants, and the Chief Editor will propose members to be appointed by the Board of Directors of CACCN.

Role and Responsibilities

The Editorial Advisory Board, in collaboration with the Chief Editor and Co-Editors assist by:

1. Participating in the peer-review process reviewing, at minimum, one manuscript per calendar year.
2. Soliciting manuscripts that fit the aim and scope of the CJCCN from colleagues on an ongoing basis.
3. Contributing manuscripts or invited articles to the CJCCN in their area of specialty.
4. Providing recommendations to the Chief Editor on the direction and focus of the CJCCN.
5. Assisting with revision of the editorial process as requested.
6. Attending Editorial Advisory Board Meetings, as requested, at minimum one annually in Spring.

Term

1. Appointments will be made by signed letter of agreement for a period of two years, with one-third of the board rotating off each year.
2. Editorial Advisory Board members may be reappointed for additional terms thereafter by submission of a written request to the Chief Editor and approval by the Board of Directors.

Criteria

The criteria for appointment and reappointment include:

1. Active/current member of the Canadian Association of Critical Care Nurses (CACCN).
2. Graduate degree required (minimum MScN, MN).
3. Demonstrated ability to write and publish professionally.
4. Demonstrated expertise in critical care, content, and/or methodological expertise.
5. Has served as a peer reviewer for the CJCCN and/or other reputable medical or nursing journals prior to expressed interest to apply for the EAB.

How to Apply?

1. Online application at: <https://www.xcdsystem.com/caccn/forms/index.cfm?ID=3oeNWII>
2. Submission of a current curriculum vitae or résumé.
3. Expression of interest.
4. Outline of expertise.
5. Publications listing.
6. Peer Review Experience.



Questions?

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Optimizing the role of nurses in critical care in weaning patients from the ventilator: A multiple-case study

LYSANE PAQUETTE, PhD, RN AND KELLEY KILPATRICK, PhD, RN

Abstract

Prolonged mechanical ventilation is harmful for patients requiring prompt weaning approaches from an interprofessional team with different and overlapping scopes of practice. Nurses play a key role in interprofessional teams, and optimization of their role can reduce the duration of mechanical ventilation.

Purpose: To understand the role of nurses in critical care in healthcare teams when weaning patients from mechanical ventilation.

Methods: Multiple-case study with concurrent mixed methods data collection was conducted in two critical care units following a pilot study in Québec, Canada. A validated and adapted questionnaire, "Survey of Mechanical Ventilation and Weaning Role Responsibilities" was completed by nurses, respiratory therapists, and physicians ($n = 102$). Interviews ($n = 49$) were conducted, with content analysis completed. Descriptive statistics were generated for quantitative data. Rodgers et al. (2016) reporting standards for case studies were used.

Results: Questionnaires showed that nurses had little involvement, autonomy, and influence over decisions related to weaning. However, in interviews, participants described several strategies used by nurses to support patients' weaning from mechanical ventilation.

Discussion: In the context of this research, the role of nurses in critical care is suboptimal when weaning patients from ventilators, however, in-depth knowledge of patient status, protocols, and education can support optimizing the nurse's role in the weaning process.

Conclusion: Strategies are needed to optimize the role of nurses in critical care when weaning patients from mechanical ventilation.

Keywords: case study, critical care, nurse, nursing scope of practice, weaning from mechanical ventilation, role enactment

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Implication for nurses

- A role clarification of nurses in critical care in weaning from mechanical ventilation (WMV), which includes: 1) monitoring patient readiness; 2) promoting WMV; 3) managing the level of wakefulness and comfort levels; and 4) integrating into the WMV process an in-depth knowledge of the patient.
- Nurses in critical care play an articulation role within the healthcare team, including activities to align team members, maintaining continuity of care, and ensuring that, collectively, key activities are in place for the patient's WMV.
- In-depth knowledge of the patient fosters nurses' commitment to the optimal execution of their role in critical care and has had a major positive influence on nurses' roles during WMV.

Background and purpose

Mechanical ventilation and weaning

Prolonged mechanical ventilation (MV) is associated with complications that increase critical care unit stays, mortality rates, and costs (Zilberberg et al., 2020). Therefore, it is important to perform the required monitoring (assess respiratory parameters, synchronize with ventilator, assess patient comfort, etc.) and promptly implement interventions to facilitate weaning from mechanical ventilation

(WMV; Burns et al., 2021). WMV is a crucial period in critical care, and its success requires the concerted effort of an interprofessional team (Moraes et al., 2022). Weaning from mechanical ventilation begins with assessing the patient's ability to breathe independently and is considered successful if the patient remains extubated for 48 hours. This process involves multiple stages and the coordinated efforts of the healthcare team.

Nurses' role in the healthcare team

Nurses in critical care units have a leading role in the team during WMV, given their continuous presence and patient monitoring (Paquette & Kilpatrick, 2020; Starnes et al., 2019). When nurses are involved in the weaning process, they reduce the duration of MV and the length of stay in critical care (Gunther et al., 2021; Hirzallah et al., 2019). However, for nurses to assume a leading role in an interprofessional team effectively, they must be able to operate to their full scope of practice. Nonetheless, there is a paucity of research describing the role of nurses in critical care teams during WMV, and where such research exists, the enactment of the nurses' role in critical care is suboptimal (Burns et al., 2018; Michaud et al., 2021; Paquette & Kilpatrick, 2020).

A professional's scope of practice encompasses the legal framework dictating the roles, functions, and activities that a

professional is authorized to perform based on their training, knowledge, and skills (Almost, 2021). The legal scope can vary in its application (Feringa et al., 2018). Role enactment (RE) reflects professionals' day-to-day work, considering various factors influencing role execution. Healthcare practitioners aim for an "optimal" scope of practice by effectively carrying out their roles while acknowledging the competencies of other team members (Almost, 2021). Conversely, practising "below" regulatory standards or a "suboptimal" scope signifies a misalignment between role expectations and scope of practice (Déry et al., 2021).

Nurses' scope of practice differs from one country to another, and from one jurisdiction to another within countries (Paquette & Kilpatrick, 2020). In Québec, Canada, little information about the legislative limits of the nurse's role during WMV is available in the regulations (Durand et al., 2016). Moreover, critical care skills and knowledge are addressed only at the university level and are not assessed during the licensure exam (Ordre des infirmières et infirmiers du Québec (OIIQ), 2022). As a result, nurses entering critical care start with different levels of education and knowledge. National certification is an option but not mandatory for nurses in critical care in Canada. In Québec, less than 2% of nurses in critical care hold their Canadian certification in critical care (M. Marques, personal communication, February 28, 2022).

These elements can alter how nurses enact their role in interprofessional teams regarding WMV. In Québec, interprofessional team members involved in WMV include nurses, respiratory therapists (RTs), and physicians (Institut canadien d'information sur la santé (ICIS), 2016). Other factors influence the enactment of roles in teams, including location (e.g., rural, urban), hospital affiliation (e.g., university or not), nurse-to-patient ratio, team composition, and education (Déry et al., 2016; Paquette & Kilpatrick, 2020; Rose, Blackwood, Burns, et al., 2011).

In countries such as Australia and several European countries, nurses in critical care often adjust the oxygen dose, adjust ventilator parameters and assess the patient's ability to breathe spontaneously during WMV (Burns et al., 2021; Paquette & Kilpatrick, 2020). Their contribution to these activities highlights the collaborative approach and shared responsibilities between nurses and physicians in these regions (Paquette & Kilpatrick, 2020). However, an international study by Burns et al. (2021) revealed significant discrepancies in the roles of healthcare professionals involved in WMV across different countries. Also, a survey in Canadian hospitals ($n = 156$) indicated limited nurse involvement in the weaning process, with physicians and RTs taking primary responsibility for adjusting weaning parameters (Burns et al., 2018). In Québec, RTs are qualified to assess patients' cardiorespiratory status, oversee ventilator management, and administer analgesia or sedation, which overlaps with roles typically assigned to nurses (Durand et al., 2016). The composition and roles within a healthcare team significantly impact nurses' RE in the context of WMV. In North America, nurses primarily focus on pain, agitation, and delirium management (Burns et al., 2018; Michaud et al.,

2023; Paquette & Kilpatrick, 2020) but the literature also indicates that their involvement in other aspects of their role may be suboptimal, potentially affecting weaning efficiency and patient outcomes.

An integrative review by Michaud et al. (2021) explored the holistic care of ventilated patients to understand the nurse's role better. The review included 45 primary and secondary sources and identified that managing anxiety, agitation, pain, dyspnea, hygiene, sleep, and environmental noise are key dimensions of the nurse's role in the care of mechanically ventilated patients. These authors point out that there is little literature on this subject (Michaud et al., 2021). Several authors highlight that the nurse's assessment is crucial and fundamental for involvement in decisions about WMV. Several authors emphasize the critical role of nurses' assessments in decisions regarding WMV, facilitated by their continuous bedside presence (Khalafi et al., 2016; Paquette & Kilpatrick, 2020; Tingsvik et al., 2015).

The specific activities of nurses in critical care during WMV require further investigation to understand how their roles are enacted (Burns et al., 2018). Therefore, the purpose of this study was to understand how nurses in critical care enact their role in healthcare teams when patients are being weaned from MV.

Methods and procedures

Design

This multiple-case study employed a mixed-methods approach. Data were collected using a questionnaire (cross-sectional study) for the quantitative data and interviews were conducted to capture qualitative insights. According to Yin (2018), case studies aim to explore, describe, and explain a phenomenon of interest comprehensively. They address research problems involving complex contexts and inquire into how and why questions. A mixed-methods approach allows for the collection of data not only pertaining to participants but also the context, minimizing potential bias (Yin, 2018). Each case, as per Yin (2018), is bound by time and defined in this study as the role enactment of nurses in critical care during WMV, involving members of the interprofessional team.

Reporting standards for organizational case studies by Rodgers et al. (2016) were followed. The project obtained approval from the Multicenter Research Ethics Review Board (MP-12-2019-1737), institutional approval from participating sites, and approval from the Ethics Committee for Health Research of the Université de Montréal.

Pilot Study

Before the main study, a pilot study refined the data collection tools (Yin, 2018), including cross-cultural validation of the questionnaire using Vallerand's methodology (1989). Adaptations were made from its previous use in Swiss intensive care units (Rose, Blackwood, Egerod, et al., 2011) to suit Québec's context (e.g., modes of ventilation, respiratory therapist). Item clarity was evaluated by a panel of experts, including nurses in critical care, a nursing professor, and a respiratory therapist. Subsequently, questionnaires were completed by nurses in critical care ($n = 4$), RTs ($n = 2$), and physicians

($n = 2$), alongside interviews ($n = 4$) lasting between 30 and 60 minutes with representatives from each group. These interviews aimed to gauge comprehension of the tool and identify areas for improvement. Additional instructions for answering questions and abbreviations in response items were added to enhance readability and efficiency.

The conceptual framework of role enactment, boundary work, and perceptions of team effectiveness (Kilpatrick et al., 2013) was used to understand how nurses in critical care enact their role in healthcare teams during WMV. Role enactment, changes in professional boundary lines, and perceptions of team effectiveness influence one another to support optimal team functioning. Following Yin's (2018) guidance, the conceptual framework supported all phases of the case study. The framework was refined following a comprehensive literature review and the cross-case analysis.

Sampling: Case selection

Two contrasting cases were chosen based on the different characteristics known to influence the RE of nurses in critical care during WMV (e.g., university affiliation, size, location, open or closed ICU, nurses' level of education, nurse-patient ratio, and orientation program; see Table 1). A critical care unit is said to be *closed* when care is provided by a multidisciplinary team led by a physician.

Participants included nurses, physicians, RTs, and other members of the interprofessional team with a direct role during WMV (nutritionists, physiotherapists). Interprofessional team members, other than nurses, were included to gain insight into nurses' role enactment during WMV. Nurses' RE is based on the interplay and interactions with several professional groups (Kilpatrick et al., 2013).

Sample characteristics: Case 1

The healthcare team in Case 1 comprised 127 nurses, 67 RTs, 13 critical care physicians, residents, and one physiotherapist. The RTs rotated between the critical care unit and other care areas, and physiotherapists were present part-time in the critical care unit. They do passive and active mobilization exercises and help nurses during chair lifts. Physicians and residents conducted daily medical rounds, starting with shorter sessions in the morning and transitioning to more comprehensive rounds later in the day.

For Case 1, 60 questionnaires were returned, with 45% in printed format and 55% completed online. The participation rate was estimated to be 27%. This participation rate was approximate because, to ensure confidentiality, the primary author did not have access to respondent emails. The sample was 87% ($n = 47$) female for the questionnaire (see Table 2). Nurses represented 46.7% of respondents, with physicians representing 9.3% and RTs 35.2%. The median age was 34.0 years ($Q1 = 27.0$, $Q3 = 46.0$). Respondents were licensed to practise for a median of 10.5 years ($Q1 = 6.0$, $Q3 = 17.5$) and worked in the critical care unit for a median of ten years ($Q1 = 4.8$, $Q3 = 15.0$). More respondents worked part-time (61.1%) compared to those who worked full-time (37.0%). Interview participants ($n = 25$) were primarily female (68%) and included nurses ($n = 11$), RTs ($n = 5$), physicians ($n = 3$), an interprofessional team member ($n = 1$), and administrators ($n = 5$). Regarding the socio-demographic characteristics of interview participants, the median age of 41.0 ($Q1 = 32.0$, $Q3 = 47.0$) was slightly higher, and there was a higher proportion of full-time workers (56%). Participants had held their licence to practise for longer than the questionnaire respondents (median 14.0 years, $Q1 = 7.0$, $Q3 = 25.5$).

Table 1

Cases

	Case 1	Case 2
Type of ICU	Closed	Closed
Beds	22	18
Environment	Urban	Regional
Vocation	Tertiary	Secondary
Specialities	Cardiovascular, thoracic, orthopedic, and general surgery; Medicine; Traumatology; Neurosurgery	Medicine, Neurology General, thoracic, vascular, and orthopedic surgery
Days of mechanical ventilation	3924 days	1496 days
Nurses	120	75
Respiratory therapists	67	21
Physicians	13	5
Orientation training	Over 40 days	30 days

Sample characteristics: Case 2

The healthcare team in Case 2 included 69 nurses, supported by a group of 21 RTs who alternated between the critical care unit and the other units. The medical team included five physicians, complemented by a physiotherapist available 20 hours per week onsite. Since the integration of physiotherapists, patients on MV are mobilized and lifted into the chair more frequently. A nutritionist is integrated when parenteral nutrition is required. Each morning, the assistant head nurse presents a report to respiratory therapists, physiotherapists, and physicians. There are no medical rounds. The physician in charge evaluates each of their patients alone and leaves the critical care unit afterward.

For Case 2 (see Table 2), 42 questionnaires were completed, four (10%) of which online, with the remainder in print form (90%). The participation rate was 41.6%, which was also approximated. Among the respondents, 73.8% ($n = 31$) were female. The sample comprised 66.7% nurses, 11.9% physicians, and 14.3% RTs. The median age was 36.0 years ($Q1 = 30.0$, $Q3 = 41.0$). Respondents had been licensed for a median of 10.5 years ($Q1 = 6.0$, $Q3 = 16.25$), and the median time on the critical care team was 5.0 years ($Q1 = 3.0$, $Q3 = 10.0$). Most respondents worked full-time (66.7%). Interview participants ($n = 24$) included nurses ($n = 10$), RTs ($n = 4$), physicians ($n = 3$), members of the interprofessional team ($n = 1$), and

administrators ($n = 6$). Overall, there were more males (37.5%), full-time employees (79.2%), and participants who had been on the team longer compared to the questionnaire respondents.

Data collection

Data collection took place between April 2019 and January 2020 and included both a self-questionnaire and interviews.

Questionnaire

The original, validated version of the questionnaire “Ventilation and weaning from mechanical ventilation: tasks, skills, and responsibilities of intensive care nurses” (Rose, Blackwood, Egerod, et al., 2011), once adapted, was distributed. This self-administered instrument includes 45 questions and takes approximately 15–20 minutes to complete. This questionnaire has been used in several studies in adult critical care units in European countries and Australia. Authorization to use the French version had previously been obtained from the primary author. Questions were designed to determine which professional (nurses, RTs, physicians) was making the decisions about mechanical ventilation.

All respondents were asked two questions regarding their perception of nurses’ autonomy and their influence on decisions related to mechanical ventilation. Autonomy is the ability to make decisions about MV and to implement them without

Table 2

Characteristics of Questionnaire Respondents

	Case 1 ($n = 60$)						Case 2 ($n = 42$)					
	<i>n</i>	%	M	Q1	Q2	Q3	<i>n</i>	%	M	Q1	Q2	Q3
Age (years)			36.3	27.0	34.0	46.0			36.9	30.0	36.0	41.0
Professionnal group												
Nurses	28	46.7					28	66.7				
Physicians	5	9.3					5	11.9				
Respiratory therapists	19	35.2					6	14.3				
Management team	2	3.7					3	7.1				
Education												
College diploma	24	44.4					17	40.5				
Baccalaureate-level education	23	42.6					20	47.6				
Master’s degree	2	3.7					0	0				
Specialty certificate	5	9.3					5	11.9				
Job status												
Full-time employment	20	37					28	66.7				
Length of time since licence (years)			13.4	6.0	10.5	17.5			11.7	6.0	10.5	16.25
Length of time with this team (years)			11.2	4.8	10.0	15.0			7.2	3.0	5.0	10.0

direct supervision from a physician (Rose, Blackwood, Egerod, et al., 2011). The perceptions of nurses' autonomy and their contribution to MV decision-making were measured on separate visual analog scales ranging from 0 (no autonomy or influence) to 10 (full autonomy or influence). A value of seven was considered moderate for autonomy (Rose, Blackwood, Egerod, et al., 2011). A convenience sample of nurses in critical care, RTs, and physicians was constituted in two selected critical care units. The questionnaire was available online or in print. Several strategies were employed to recruit respondents, such as consistent presence on the units during data collection, hand-delivering printed copies or inviting team members to complete online questionnaires, utilizing formats that minimized response burden, and regularly sending reminders (Dillman et al., 2014).

Interviews

Participants were recruited using maximum variation sampling (Yin, 2018). This type of recruitment aims to intentionally select participants to obtain a variety of perspectives. Management teams, comprised of unit manager, medical director, RT manager and clinical consultant were invited to participate. Nurses, RTs, physicians, and other members of the interprofessional team were purposively sampled for diversity (Yin, 2018). The inclusion criteria were to hold a permanent position in the hospital and speak French. The exclusion criteria were to hold a temporary position, casual, or work for a private healthcare staffing agency.

Individual interviews were conducted to explore nurses' RE during WMV. The interview guide was based on the conceptual framework and tested in previous research (Kilpatrick et al., 2016). Questions centred on nurses' perceptions of their role, their day-to-day practice, and distinctions between their role and those of other professionals engaged in WMV. Similar inquiries were directed toward other healthcare professionals to grasp their perspectives on their role within the team and their views regarding the role of nurses. In both cases, the interviews lasted between 23 and 90 minutes with an average of 45 minutes. The audio recordings were transcribed verbatim. A socio-demographic questionnaire was completed by participants (Kilpatrick et al., 2016).

Data analysis

Data analysis was carried out according to the recommendations of Yin (2018). The first phase consisted of the analysis of the pilot study, followed by the intra-case and cross-case analyses. For each case (intra-case), the quantitative and qualitative data were analyzed separately and integrated at the end of the analysis. For the questionnaire data, descriptive analyses (median, mean, interquartile) were performed for continuous variables and frequencies with percentages for categorical variables (Tabachnick & Fidell, 2019) with SPSS (version 25, 2019). Due to non-normal data distribution, median and interquartile range were used for interpreting the quantitative results (Tabachnick & Fidell, 2019). Additionally, some sections and questions in the returned questionnaires remained unanswered. However, they were still included in the analysis as they contributed sufficient data to meet the study's objectives.

Content analysis of the interviews was performed following the method outlined by Miles et al. (2013). Data from various sources were mapped to describe the cases, enable cross-case comparisons, and identify patterns (Yin, 2018). Each case was comprehensively described to facilitate cross-case analysis (Yin, 2018). A cross-case analysis was carried out using a joint display board, which made it possible to compare the results to find convergences and divergences, understand what may have made the difference in the patterns, and achieve a comprehensive understanding of the phenomenon of interest (Miles et al., 2013). All analyses were performed by the principal investigator (LP) and reviewed by her thesis advisor (KK). A research associate contributed to the statistical analyses.

Rigour

Yin (2018) recommends four criteria of rigour to examine specific to carrying out case study research. For construct validity, clear conceptual definitions were derived from empirical literature and integrated into the conceptual framework, enhancing the accuracy of coding. The pilot study, diverse data sources, and a chain of evidence bolstered the robustness of the study (Yin, 2018). Internal validity was ensured via data triangulation with a joint display board (Miles et al., 2013), and regular validation of coding, results, and analysis interpretation by the thesis supervisor (Francis et al., 2010). Recruitment continued until data saturation per Francis et al.'s method (2010). Coding fidelity was maintained through investigator-supervisor collaboration, verifying over 10% of textual coding, as recommended by Francis et al. (2010). External validity, specifically analytic generalization (Yin, 2018), was achieved through two cases, supporting phenomena and theory replication, and comparison with existing literature (Miles et al., 2013; Yin, 2018). Reliability was ensured by a priori protocol development, comprehensive documentation, and creation of separate databases for each case (Yin, 2018).

Findings

Based on the analyses conducted, the RE of nurses during WMV is described as follows: 1) monitoring readiness for WMV; 2) promoting WMV; 3) managing the level of wakefulness and comfort; and 4) integrating in-depth knowledge of the patient. The findings from the cross-case analysis of the two cases are presented with the data sources and illustrative citations from which they emerged.

Nurses' Role Enactment

As described above, four themes emerged from the cross-case analysis to describe nurses' RE during WMV. In the presentation of the results, certain terms will be used to illustrate the frequency of a response or an interaction. In the interview results, "majority" refers to 50%–75% of participants, "most" to over 75%, and "few" to a small number ($n \leq 5$).

Monitoring readiness for weaning from mechanical ventilation

According to the results of the questionnaire (see Table 3), in both cases, the contribution of nurses in assessment activities, namely the assessment of the patient's eligibility for WMV, their response to WMV, and whether the patient was ready for extubation, had low recognition among all team members. It was identified that it was the RTs and/or the physicians who

carried out these activities. In Case 1, nurses were less involved (46.7%) in assessing the patient's response to WMV compared to Case 2 (73.3%), where members of the interprofessional team perceived nurses as primarily responsible for this task. Conversely, in Case 1, RTs were primarily tasked with evaluating the patient's response to WMV. More respondents believed that nurses had a role in recognizing that the patient was ready for weaning (Case 1 = 41.7%, Case 2 = 23.8%), ready for extubation (Case 1 = 30%, Case 2 = 11.9%), or had failed to wean (Case 1 = 43.3%, Case 2 = 33.3%) compared to Case 2.

Interviews with the nurses clarified the results of the questionnaires. It was emphasized that their evaluations during weaning or parameter adjustments were specifically focused on the patient's response, while RTs primarily reviewed the ventilator data.

According to almost all questionnaire respondents, nurses did not manage ventilator settings in the context of WMV except to adjust the fraction of inspired oxygen (FiO₂). More specifically, the activity in which they demonstrated the most autonomy was the administration of a bolus of FiO₂ (see Table 4). During the interviews, in Case 2, nurses reported that they perceived weaning from FiO₂ to be part of their contribution to WMV, but not in Case 1. There were also more RTs in critical care in Case 1 compared to Case 2, and this ensured more availability to modify parameters or reduce the FiO₂.

In the interviews, many nurses associated WMV with the manipulation of ventilator parameters. In this regard, WMV was seen as a part of the role of RTs. As a result, when nurses were asked about their role in WMV, they repeatedly hesitated. This was consistent with the results of the questionnaire showing low levels for nurses manipulating ventilator parameters.

In both cases, the questionnaire responses indicated that nurses perceived that they had low autonomy and little influence on decisions about WMV (Table 5). However, they still perceived a higher level of autonomy than what was perceived by the physicians and RTs. On the other hand, the interviews revealed the opposite, namely that the influence of nurses on the decision to WMV was fundamental to successful weaning. Nurses primarily perceived their autonomy to be related to activities clearly within their scope of practice (e.g., mouth care, respiratory tract suctioning).

Interviews provided examples of nurses' influence on decisions related to WMV by sharing information about the patient with other team members. In Case 1, the nurses were less consulted than in Case 2. Therefore, they had fewer opportunities to voice their opinions or provide information. By contrast, in Case 2, physicians reported that they considered the nurses' perspective on patient eligibility for WMV and acknowledgment of WMV failure. However, physicians also noted that nurses lacked knowledge of MV, leading them to discuss ventilatory parameters with RTs instead.

For the interviews, the nurses explained that they assessed the patient during WMV by collecting objective parameters, including a complete respiratory assessment, arterial blood gas results, signs of dyspnea, hemodynamic status, fluid balance, etc. Nurses also reported the patient's assessment, such as emotional well-being, comfort levels, dyspnea, etc. Additionally, the nurse's presence and assessment were also identified as important. A physician shared this component of the nurse's role: "The repercussions of what we choose to do or not to do, she [nurse] sees in real time" (Phy 1_Case 1).

Table 3

Tasks, Skills, and Responsibilities of Nurses During Weaning from Mechanical Ventilation, According to Nurses, Respiratory Therapists, and Intensivists

Tasks	Case 1		Case 2	
	(n = 60)		(n = 42)	
	n	%	n	%
Assess and adjust sedation level	50	83.3	37	88.1
Assess the patient's eligibility for WMV	25	41.7	10	23.8
Assess patient response to weaning	28	46.7	31	73.8
Assess whether the patient is ready for extubation	18	30	5	11.9
Acknowledge weaning failure	26	43.3	14	33.3
Determine the initial selection of ventilator settings	0	0	1	2.4
Adjust ventilator settings	1	1.7	3	7.1
Determine the mode of weaning	2	3.3	2	4.8

Note. Total percentage may exceed 100%, as multiple responses were possible.
WMV = weaning from mechanical ventilation.

Table 4*Frequency of Decisions Related to Weaning from Mechanical Ventilation*

Decisions	Case 1				Case 2			
	Never		Routine		Never		Routine	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Modifying the ventilatory mode	26	50	3	5.8	32	78	0	0
Adjusting frequency	44	83	1	1.9	34	85	0	0
Adjusting tidal volume	47	88.7	0	0	35	85.4	0	0
Setting PS	44	83	1	1.9	36	87.8	0	0
Increasing PS	46	86.6	1	1.9	35	85.4	0	0
Decreasing PS	47	88.7	1	1.9	35	85.4	0	0
Increasing PEEP	49	92.5	0	0	34	82.9	0	0
Reducing PEEP	47	88.7	0	0	34	82.9	0	0
Reducing FiO ₂	11	21.2	13	25	5	12.5	22	55.0
Increasing FiO ₂	11	21.6	15	27.5	4	9.8	27	65.9
Giving a bolus of FiO ₂	3	5.8	32	61.5	2	4.9	30	73.2

Note. PS = pressure support; PEEP = positive end-expiratory pressure; FiO₂ : fraction of inspired oxygen

Table 5*Nurses' Level of Autonomy and Involvement in Decision-Making*

	Case 1				Case 2			
	M	Q1	Q2	Q3	M	Q1	Q2	Q3
Nurses' level of autonomy in mechanical ventilation practices	3.6	2.0	3.0	5.0	3.8	2.0	4.0	5.0
Frequency with which nurses influence mechanical ventilation decisions	5.2	3.8	5.0	7.0	4.7	2.0	4.0	7.0

Note. 0 = no autonomy / influence; 10 = full autonomy / influence

Promoting weaning from mechanical ventilation

Nurses interviewed stated that they undertook various activities to promote WMV, such as elevating the head of the bed, mobilizing, positioning to promote lung expansion, rest, optimizing nutritional status, and fluid balance. A difference was noted with ventilator-acquired pneumonia (VAP) prevention activities (e.g., oral care, elevated head of the bed, early mobilization). The nurses interviewed from Case 1 did not associate these activities with VAP. In Case 2, a mnemonic poster for the prevention of VAP was present at the bedside of patients. Nurses also received training on early mobilization and VAP prevention from critical care nursing colleagues. Similarly, the addition of physiotherapists favoured more openness to mobilize ventilated patients compared to Case 1. Overall, some activities were identified as part of a routine of care but were not necessarily presented as being related to WMV. One physician

described this aspect of the nurse's role: "So, I think it's the nurse's role to stop the weaning process or to try to start it, or to precipitate it" (Phy 2_Case 2). Most participants reported that the management of analgesia, sedation, delirium, and patient comfort is a fundamental aspect of the WMV process.

Managing the level of wakefulness and comfort

Responses to the questionnaire indicated that management of sedation and analgesia was attributed to nurses in critical care by almost all respondents (Case 1 = 83.3%, Case 2 = 88.1%). This was supported by the interviews in both cases. Managing the level of wakefulness and comfort (assessment, adjustment of medication, management of delirium) was strongly attributed to nurses, but this was also shared with physicians.

In both cases, the interviews revealed that nurses typically awaited instructions from the physicians before reducing

analgesia and sedation infusions, despite having target values to achieve on the sedation scale (e.g., Richmond Agitation and Sedation Scale [RASS]). Nurses mentioned the dependence of some colleagues on physicians or RTs to make their decisions. That is, they relied on them instead of being proactive and taking the initiative. Some nurses found that their colleagues were waiting, maintaining the status quo when no initiative for WMV was undertaken: “[...] there is no supervision around WMV; it’s a free-for-all for the respiratory therapist and for the nurse; sometimes, I think that leads to failures” (Adm 3_Case1).

Most interview participants, including nurses, described the critical thinking required to balance the patient’s level of wakefulness with comfort so the patient could breathe independently. Most nurses reported using the RASS scale to assess the patient’s state of wakefulness and sedation, while simultaneously determining the level required of analgesia and sedation. Nurses’ management of delirium was discussed in both cases, but there was no mention of the use of a validated scale (e.g., The Confusion Assessment Method for the Intensive Care Unit [CAM-ICU]). Nurses identified preventive activities to reduce the risk and duration of delirium, including reassurance, reorientation, facilitation of sleep periods, and family inclusion.

Several interview participants, including nurses, RTs, and physicians, also described nurses supporting patients during WMV, providing encouragement, assisting with breathing control, and alleviating anxiety. Through their presence and the development of a bond of trust, nurses supported patients (e.g., maintaining alertness and encouraging breathing) and aimed to avoid the excessive use of deep analgesia-sedation. Some nurses cited the inclusion of the family to reduce anxiety. The following excerpt presents one nurse’s perception of this aspect of her role: “[...] if you really want to push on spontaneous ventilation, you think about giving perhaps the minimum of analgesia, not to minimize the effect of sedation and having put him [patient] too far to sleep and he’s no longer breathing” (Nur 9_Case1).

Integrating in-depth knowledge of the patient

In both cases, the significance of acquiring a profound understanding of the patient was underscored by all professionals who participated in the interviews. This activity entails building a comprehensive picture of the patient as an individual and knowledge about the family or significant others. Interview participants from the other professional groups agreed that nurses knew the patient best and thus had a pivotal role as well as being a reference for all team members. Nurses integrate this in-depth knowledge to personalize the WMV process. According to many nurses, the patient-centred approach serves as a driving force, fostering their commitment to their role. This perspective enables them to actively participate in decision-making and discussions, particularly in setting care objectives. Many nurses described “being there” for the patient and representing their interests within the team to promote WMV, as described in the following excerpt: “We have a global vision and not just a respiratory one [...]. We have a different vision because we touch on all the patient’s systems [...] the family too [...]” (Nur 3_Case 2).

Discussion

In this multiple-case study, nurses performed a range of activities to assess readiness for WMV, including monitoring objective parameters and patient data. They conducted activities to promote WMV (e.g., early mobilization, prevention of VAP). Nurses completed activities related to the assessment and management of pain, sedation, delirium, and WMV. The importance of knowing the patient was emphasized. This activity consisted of developing a body of knowledge about the patient, understanding the patient’s condition and treatment response, and knowing the patient as a “person” (Tingsvik et al., 2015).

Our findings suggest that nurses enact their role suboptimally when weaning patients from mechanical ventilation, especially compared to reports in international literature (Michaud et al., 2021; Paquette & Kilpatrick, 2020). Minimal nurse participation across various aspects of their role in WMV, including identifying eligibility, conducting spontaneous awakening trials, and adjusting ventilator settings, were identified (Alkhathami et al., 2023; Burns et al., 2021).

Nurses are not adequately recognized in this area of practice, thus limiting the contribution they could offer. This could be explained by a lack of role clarity and limited knowledge of the comprehensive scope of nursing roles, training, and skills required for practice in critical care (Déry et al., 2021; Feringa et al., 2018). Internationally, researchers have found that nurses face limited role enactment, a lack of role clarity, and inadequate interpretation of nurses’ scope of practice (Déry et al., 2021; Feringa et al., 2018). Nurses tend to construct their role through experience rather than through a clear understanding of their scope of practice (Feringa et al., 2018). As a result, nurses may base their decisions more on their skills and knowledge rather than consciously adhering to their regulatory scope of practice (Feringa et al., 2018). Furthermore, Jansson et al. (2019) surveyed nurses in critical care ($n = 85$ nurses) in Finland and highlighted that role ambiguity among nurses stemmed from unclear expectations and organizational variations in weaning practices.

Nurses in our study described having limited autonomy in performing activities within their scope of practice because they depended on medical guidance. In addition, nurses were not involved in decision-making to the extent expected according to their scope of practice, the level of competency of nurses in critical care, and other members of the interprofessional team (Association des infirmières et infirmiers du Canada (AIIC), 2017; Danielis et al., 2020). These results were identified by Alkhathami et al. (2023) also using the questionnaire developed by Rose, Blackwood, Egerod, et al. (2011). These authors reported low nurse involvement in critical decisions, limited autonomy, and little confidence in their ability to manage MV (Alkhathami et al., 2023).

Most nurses in our study were not involved in WMV as they perceived it to be the responsibility of RTs, viewing these tasks as outside of their scope of practice (Alkhathami et al., 2023). Their activities during WMV are intertwined with those of

other healthcare professionals, including mobilization, spontaneous breathing trials, and medication adjustments (Balas et al., 2019; Boehm et al., 2016). Larsen et al. (2022) noted the difficulty in distinguishing the independent contributions of nurses from medical treatment. Consequently, nurses often define their role in WMV based on the responsibilities of other professionals rather than their defined scope of practice.

Clear role delineation among team members is essential for effective teamwork and high-quality patient care (Kilpatrick et al., 2021). However, Boehm et al. (2016) highlighted misunderstandings about the nursing role during WMV among other professionals and a lack of nurses' understanding of other team members' roles. This mutual understanding is vital due to the interdependent nature of tasks involved in WMV (Boehm et al., 2016).

The study highlighted the role of nurses in "articulation" work within the healthcare team, which involves aligning team members, maintaining continuity of care, and ensuring comprehensive patient coverage during WMV (Postma et al., 2015). Articulation work encompasses nurses' deliberate efforts to connect their actions with patient needs, the responsibilities of each team member, task execution, and specific factors like unit workload and staffing. It serves to facilitate the overall WMV process by effectively coordinating various aspects of patient care. Articulation work is central to nurses' roles, promoting a holistic and individualized approach to WMV (Cederwall et al., 2018). It leads to more holistic care and nurses' involvement across the continuum of care during WMV (Paquette et al., 2018; Tingsvik et al., 2015). This process is important because it is grounded in an in-depth understanding of patient needs and a clear comprehension of the nurse's role, leading to better care across the continuum during WMV (Cederwall et al., 2018; Postma et al., 2015).

Recommendations

The use of protocols or checklists to support the nurses' RE during WMV is widespread and effective (Gunther et al., 2021; Hirzallah et al., 2019; Starnes et al., 2019). A combination of strategies is suggested, including decision support tools, reminders using posters or annotations via technological devices (e.g., intervention packages for ventilator-associated pneumonia or MV care), short informal teaching activities, and on-site champions as resource persons (Jansson et al., 2019). These supports guide nurses through various WMV-related activities and help to clarify their role (Gunther et al., 2021). Both the acquisition of knowledge related to MV and its weaning as well as experience favour a more optimal enactment of nurses' role (Jansson et al., 2019). Educational activities concerning MV promote positive outcomes and increased adherence to best practices in WMV (Jansson et al., 2019; Kimura et al., 2023).

In the current project, unit-related characteristics influenced nurses' role enactment during WMV. Elements beyond their control, such as environmental factors, inadequate resources, and lack of time, have been identified in several empirical studies as barriers to RE (Feringa et al., 2018; Michaud et al., 2021). Internationally, researchers (Alkhathami et al., 2023; Michaud et al., 2021) have argued that sufficient staffing and a low patient-to-nurse ratio are necessary to allow nurses to

be present at the bedside and perform close monitoring of patients. These researchers describe that caring for a patient on MV is demanding and requires time and a constant presence.

Limitations

This study was limited to a specific environment, namely critical care units in the province of Québec. The choice to conduct a multiple-case study in two different settings supported a conceptual generalization (Yin, 2018). The response rate and sample size for the questionnaires were low but aligned with recent studies of healthcare professionals. Indeed, according to a systematic review of survey response rates and associated factors (Meyer et al., 2022), health professionals were found to have lower response rates than other groups of professionals. As described in the methods, the researchers in the current study undertook several activities to enhance the response rate. Interviews were a possible source of bias due to the Hawthorne effect. Steps were taken to reduce the risk; for instance, data were collected over a long period (approximately eight months), and multiple data sources were used. Considering that the primary author was known to many participants, she was seen as an insider rather than an outsider to the critical care unit and its team, which may have reduced the risk of social desirability.

Conclusion

Nurses are the professional group most present at the bedside (Paquette & Kilpatrick, 2020), so they are key to successful WMV. Nurses perform monitoring, wakefulness management, WMV activities, and develop a deep knowledge of the patient. Nevertheless, suboptimal RE persists when they are responsible for a patient during WMV. A lack of role clarity underlies this finding, and repercussions, including prolonged weaning, are to be anticipated for patients. In addition, nurses' RE is influenced by team functioning, as WMV requires input from different professionals. Nurses can make a positive contribution to WMV if their role is recognized. However, the more they actively engage as part of the inter-professional team in the context of MV and WMV, the greater recognition they will receive. Most research highlights nurses' roles and responsibilities in terms of changing ventilation parameters and assessment. However, WMV success can be optimized through other activities, suggesting the importance of nurses' involvement in the WMV process. Subsequent research should explore how team functioning influences the RE of nurses in critical care when weaning the patient from mechanical ventilation.

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REFERENCES

- Alkhatami, M. G., Alenazi, M. H., Alsalamah, J. A., Alkhatami, F. M., Alshammari, S. K., Alanazi, H. O., Sreedharan, J. K., & Alnasser, M. A. (2023). Perceived responsibility for mechanical ventilation and weaning decisions in intensive care units in the Kingdom of Saudi Arabia. *Canadian Journal of Respiratory Therapy*, 59, 75–84. <https://doi.org/10.29390/cjrt-2022-053>
- Almost, J. (2021). *Les soins infirmiers réglementés au Canada : le portrait de 2021*. https://hl-prod-ca-oc-download.s3-ca-central-1.amazonaws.com/CNA/66561cd1-45c8-41be-92f6-e34b74e5ef99/UploadedImages/documents/Regulated-Nursing-in-Canada_f.pdf
- Association des infirmières et infirmiers du Canada (AIIC). (2017). *Plan directeur de l'examen et compétences de la spécialité*. https://hl-prod-ca-oc-download.s3-ca-central-1.amazonaws.com/CNA/66561cd1-45c8-41be-92f6-e34b74e5ef99/UploadedImages/documents/exam_blueprint_and_specialty_competencies_critical_care_fr_jan2019.pdf
- Balas, M. C., Pun, B. T., Pasero, C., Engel, H. J., Perme, C., Esbrook, C. L., Kelly, T., Hargett, K. D., Posa, P. J., & Barr, J. (2019). Common challenges to effective ABCDEF bundle implementation: the ICU liberation campaign experience. *Critical Care Nurse*, 39(1), 46–60.
- Boehm, L. M., Vasilevskis, E. E., & Mion, L. C. (2016, Nov/Dec). Interprofessional perspectives on ABCDE bundle implementation: A focus group study. *Dimensions of Critical Care Nursing*, 35(6), 339–347. <https://doi.org/10.1097/dcc.0000000000000208>
- Burns, K. E., Raptis, S., Nisenbaum, R., Rizvi, L., Jones, A., Bakshi, J., Tan, W., Meret, A., Cook, D. J., & Lellouche, F. (2018). International practice variation in weaning critically ill adults from invasive mechanical ventilation. *Annals of the American Thoracic Society*, 15(4), 494–502.
- Burns, K. E. A., Rizvi, L., Cook, D. J., Lebovic, G., Dodek, P., Villar, J., Slutsky, A. S., Jones, A., Kapadia, F. N., & Gattas, D. J. (2021). Ventilator weaning and discontinuation practices for critically ill patients. *JAMA*, 325(12), 1173–1184.
- Cederwall, C.-J., Olausson, S., Rose, L., Naredi, S., & Ringdal, M. (2018). Person-centred care during prolonged weaning from mechanical ventilation, nurses' views: An interview study. *Intensive and Critical Care Nursing*, 46, 32–37.
- Danielis, M., Palese, A., Terzoni, S., & Destrebecq, A. L. L. (2020). What nursing sensitive outcomes have been studied to-date among patients cared for in intensive care units? Findings from a scoping review. *International Journal of Nursing Studies*, 102, 103491.
- Déry, J., Clarke, S. P., D'Amour, D., & Blais, R. (2016). Education and role title as predictors of enacted (actual) scope of practice in generalist nurses in a pediatric academic health sciences center. *JONA: The Journal of Nursing Administration*, 46(5), 265–270.
- Déry, J., Paquet, M., Boyer, L., Dubois, S., Lavigne, G., & Lavoie-Tremblay, M. (2021). Optimizing nurses' enacted scope of practice to its full potential as an integrated strategy for the continuous improvement of clinical performance: A multicentre descriptive analysis. *Journal of Nursing Management*, 30(1), 205–213. <https://doi.org/10.1111/jonm.13473>
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method*. John Wiley & Sons.
- Durand, S., Harvey, B., & D'Anjou, H. (2016). *Le champ d'exercice et les activités réservées des infirmières*. <https://www.oiiq.org/documents/20147/1306047/1466-exercice-infirmier-activites-reservees-web+%282%29.pdf/84aaaa05-af1d-680a-9be1-29fcd8075e3>
- Feringa, M. M., De Swardt, H. C., & Havenga, Y. (2018). Registered nurses' knowledge, attitude, practice and regulation regarding their scope of practice: A literature review. *International Journal of Africa Nursing Sciences*, 8, 87–97. <https://doi.org/10.1016/j.ijans.2018.04.001>
- Francis, J. J., Johnston, M., Robertson, C., Glidewell, L., Entwistle, V., Eccles, M. P., & Grimshaw, J. M. (2010). What is an adequate sample size? Operationalising data saturation for theory-based interview studies. *Psychology & Health*, 25(10), 1229–1245. <https://doi.org/10.1080/08870440903194015>
- Gunther, I., Pradhan, D., Lubinsky, A., Urquhart, A., Thompson, J. A., & Reynolds, S. (2021). Use of a multidisciplinary mechanical ventilation weaning protocol to improve patient outcomes and empower staff in a medical intensive care unit. *Dimensions of Critical Care Nursing*, 40(2), 67–74.
- Hirzallah, F. M., Alkaissi, A., & do Céu Barbieri-Figueiredo, M. (2019). A systematic review of nurse-led weaning protocol for mechanically ventilated adult patients. *Nursing in Critical Care*, 24(2), 89–96.
- Institut canadien d'information sur la santé (ICIS). (2016). *Les unités de soins intensifs au Canada*. https://secure.cihi.ca/free_products/ICU_Report_FR.pdf
- Jansson, M. M., Syrjälä, H. P., & Ala-Kokko, T. I. (2019). Implementation of strategies to liberate patients from mechanical ventilation in a tertiary-level medical center. *American Journal of Infection Control*, 47(9), 1065–1070.
- Khalafi, A., Elahi, N., & Ahmadi, F. (2016). Continuous care and patients' basic needs during weaning from mechanical ventilation: A qualitative study. *Intensive and Critical Care Nursing*, 37, 37–45.
- Kilpatrick, K., Jabbour, M., & Fortin, C. (2016). Processes in health-care teams that include nurse practitioners: What do patients and families perceive to be effective? *Journal of Clinical Nursing*, 25(5-6), 619–630. <https://doi.org/10.1111/jocn.13085>
- Kilpatrick, K., Lavoie-Tremblay, M., Lamothe, L., Ritchie, J. A., & Doran, D. (2013). Conceptual framework of acute care nurse practitioner role enactment, boundary work, and perceptions of team effectiveness. *Journal of Advanced Nursing*, 69(1), 205–217.
- Kilpatrick, K., Tchouaket, E., Fernandez, N., Jabbour, M., Dubois, C.-A., Paquette, L., Landry, V., Gauthier, N., & Beaulieu, M.-D. (2021). Patient and family views of team functioning in primary healthcare teams with nurse practitioners: A survey of patient-reported experience and outcomes. *BMC Family Practice*, 22(1), 1–14.
- Kimura, R., Barroga, E., & Hayashi, N. (2023). Effects of mechanical ventilator weaning education on ICU nurses and patient outcomes: A scoping review. *The Journal of Continuing Education in Nursing*, 54(4), 185–192. <https://doi.org/doi:10.3928/00220124-20230310-08>
- Larsen, M. H., Johannessen, G. I., & Heggdal, K. (2022). Nursing interventions to cover patients' basic needs in the intensive care context – A systematic review. *Nursing Open*, 9(1), 122–139. <https://doi.org/10.1002/nop2.1110>
- Meyer, V. M., Benjamins, S., Moumni, M. E., Lange, J. F. M., & Pol, R. A. (2022). Global overview of response rates in patient and health care professional surveys in surgery: A systematic review. *Annals of Surgery*, 275(1), 81. <https://doi.org/10.1097/SLA.0000000000004078>

- Michaud, M. S., Gagnon, M., Jacob, J.-D., & Lewis, K. B. (2021). Rôle de l'infirmière lors de la prise en charge d'une personne ventilée aux soins intensifs : Une revue narrative. *The Canadian Journal of Critical Care Nursing*, 32, 20–29. <https://doi.org/10.5737/23688653-3222029>
- Michaud, M. S., Gagnon, M., Jacob, J. D., & Lewis, K. B. (2023, Winter). Quelles sont les barrières à la prise en charge des personnes ventilées ? Perspective des infirmières et infirmiers aux soins intensifs. *Canadian Journal of Critical Care Nursing*, 34(4), 31–42. <https://doi.org/10.5737/23688653-34431>
- Miles, M., Huberman, M., & Saldana, J. (2013). *SAGE: Qualitative data analysis: A methods sourcebook*. Sage.
- Moraes, F. d. S., Marengo, L. L., Moura, M. D. G., Bergamaschi, C. d. C., de Sá Del Fiol, F., Lopes, L. C., Silva, M. T., & Barberato-Filho, S. (2022). ABCDE and ABCDEF care bundles - A systematic review of the implementation process in intensive care units. *Medicine*, 101(25), e29499. <https://doi.org/10.1097/MD.00000000000029499>
- Ordre des infirmières et infirmiers du Québec (OIIQ). (2022). *Accéder à la profession infirmière au Québec - Choisir sa formation*. Retrieved 14 avril 2022 from <https://www.oiiq.org/accéder-profession/decouvrir-la-profession/choisir-sa-formation>
- Paquette, L., & Kilpatrick, K. (2020). L'autonomie décisionnelle d'infirmières de soins intensifs lors du sevrage de la ventilation mécanique : Une analyse de concept. *Recherche en soins infirmiers*, 143(4), 76–91. <https://doi.org/10.3917/rsi.143.0076>
- Paquette, L., Saint-Pierre, C., & Leclerc, M. M. (2018). Étude phénoménologique descriptive sur l'expérience du prendre soin dans un environnement de soins intensifs selon la perspective d'infirmières nouvellement diplômées. *Revue Francophone Internationale de Recherche Infirmière*, 4(4), e223–e235.
- Postma, J., Oldenhof, L., & Putters, K. (2015). Organized professionalism in healthcare: Articulation work by neighbourhood nurses. *Journal of Professions and Organization*, 2(1), 61–77.
- Rodgers, M., Thomas, S., Harden, M., Parker, G., Street, A., & Eastwood, A. (2016). Developing a methodological framework for organisational case studies: A rapid review and consensus development process. *Health Services and Delivery Research*, 4(1), 1–142. <https://doi.org/https://doi.org/10.3310/hsdr04010>
- Rose, L., Blackwood, B., Burns, S. M., Frazier, S. K., & Egerod, I. (2011). International perspectives on the influence of structure and process of weaning from mechanical ventilation. *American Journal of Critical Care*, 20(1), e10–e18.
- Rose, L., Blackwood, B., Egerod, I., Haugdahl, H. S., Hofhuis, J., Isfort, M., Kydonaki, K., Schubert, M., Sperlinga, R., Spronk, P., Storli, S., McAuley, D. F., & Schultz, M. J. (2011). Decisional responsibility for mechanical ventilation and weaning: An international survey. *Critical Care*, 15(6), R295. <https://doi.org/10.1186/cc10588>
- Starnes, E., Palokas, M., & Hinton, E. (2019). Nurse-initiated spontaneous breathing trials in adult intensive care unit patients: A scoping review. *JB I Evidence Synthesis*, 17(11), 2248–2264.
- Tabachnick, B. G., & Fidell, L. S. (2019). *Using Multivariate Statistics* (7th ed.). Pearson.
- Tingsvik, C., Johansson, K., & Mårtensson, J. (2015). Weaning from mechanical ventilation: Factors that influence intensive care nurses' decision-making. *Nursing in Critical Care*, 20(1), 16–24. <https://doi.org/10.1111/nicc.12116>
- Vallerand, R. J. (1989). Vers une méthodologie de validation trans-culturelle de questionnaires psychologiques: Implications pour la recherche en langue française. *Canadian Psychology/Psychologie canadienne*, 30(4), 662–680. <https://doi.org/10.1037/h0079856>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6 ed.). SAGE.
- Zilberberg, M. D., Nathanson, B. H., Ways, J., & Shorr, A. F. (2020). Characteristics, hospital course, and outcomes of patients requiring prolonged acute versus short-term mechanical ventilation in the United States, 2014–2018. *Critical Care Medicine*, 48(11), 1587–1594.

Properties of moral distress experienced by Canadian intensive care unit nurses during the COVID-19 pandemic: An interpretive descriptive study

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Abstract

Background & Purpose: In response to the multitude of ethical issues that arise in the delivery of care provided in intensive care units (ICUs), nurses working in this setting frequently experience moral distress. The properties of moral distress have been well defined. However, within the context of the coronavirus-disease 2019 (COVID-19) pandemic, less is known about the properties of moral distress experienced by ICU nurses. This subsequently affects the advancement of our knowledge, specifically of effective mitigative interventions for moral distress. The purpose of this analysis is to describe the key properties of moral distress experienced by ICU nurses during the COVID-19 pandemic.

Methods & Procedures: Guided by interpretive descriptive design, a purposeful sample of 40 Canadian ICU nurses described their experiences of moral distress within the context of their practice during the COVID-19 pandemic. Data generated included the administration of a demographic questionnaire and the Measure of Moral Distress - Healthcare Providers survey, and 1:1 semi-structured virtual (telephone or videoconference) interviews (May–September 2021). Analysis was informed by the tenets of reflexive thematic analysis and rapid qualitative analysis.

Results: Nurses experienced moral distress under the complex interplay of two overarching, broad conditions: (1) when nurses' voices, driven by efforts to optimize patient care at an exceptionally high standard, were not heard; and (2) when patients received substandard levels of care, that was not patient-centered, pain free, or that did not align with organizational, professional, or personal standards. These two broad conditions were influenced by three sub-conditions: (1) lack of respect for nurses' expert knowledge; (2) cultures and systems of communication and (3) responses to safety and staffing.

Discussion: Moral distress experienced by Canadian ICU nurses is a complex phenomenon. These findings advance and refine our knowledge of key components of moral distress. We identified the conditions that generate moral distress for nurses, and the properties of the antecedent moral events. Future approaches to mitigate moral distress need to address the broad conditions under which moral distress occurs.

Keywords: COVID-19, nursing, intensive care, moral distress, nursing ethics

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Implications for nurses

- Intensive care unit nurses' experiences of moral distress, both prior to and amid the pandemic, existed under the interplay of two co-existing conditions: (1) where their voices, motivated by the desire to achieve comprehensive and patient-centered nursing care, were not heard, and (2) circumstances of substandard levels of patient care.
- Conditions of moral distress were cultivated when nurses' voices were not equally valued or respected, by poor systems and cultures of communication, and inappropriate responses to safety and staffing.
- The key next steps for researchers, educators, and leaders will be to explore strategies that influence the broad conditions of moral distress, in attempts to mitigate the outcomes of moral distress for nurses, patients, and health systems

Given the precarious health status of critically ill patients cared for in intensive care units (ICUs), the clinical work environment is embedded with ethical decision-making. Consequently, healthcare workers in this setting, including registered nurses, are confronted with moral events daily (Ulrich & Grady, 2017). In response to these events, nurses are at high risk for experiencing moral distress. Nurses working in ICUs typically report higher moral distress scores compared to nurses working in other clinical contexts (McAndrew et al., 2016; Sirilla et al., 2017) and to other ICU healthcare professionals (Bruce et al., 2015; Dodek et al., 2016; Henrich et al., 2017; Silverman et al., 2022). In response to moral distress, nurses can experience several negative outcomes that greatly impact their quality of life and health (Arnold, 2020; Atashzadeh-Shoorideh et al., 2021). These outcomes can influence nurses' professional integrity (Epstein et al., 2020; Forozeiya et al., 2019; Henrich et al., 2017) and rates

of attrition from the workplace (Sheppard et al., 2022), affecting both patient care and health system outcomes.

The study of moral distress has been a long-standing focus of nursing, and consequently, definitions and operationalization of key concepts of moral distress have evolved as researchers have developed theoretical models to explain this phenomenon (Corley, 2002; Jameton, 1984; Morley et al., 2021b; Nathaniel, 2006). Moral distress was first described (Jameton, 1984) as a constraint-based phenomena, in which a nurse is prevented from pursuing a course of action that aligns with what they believe is right (Jameton, 2017). Subsequently, some nursing scholars have argued for an expanded definition to acknowledge the complexity of ethical events beyond constrained-based scenarios (Campbell et al., 2016; Fourie, 2017; Morley, Bradbury-Jones, et al., 2020; Wilson, 2017). For example, in the Moral Distress Model, Morley et al. (2019) defines moral distress as ‘the psychological distress that is causally related to a moral event’ (p 4). Moral events are categories of ethical events that may precede (moral constraint, conflict, tension, dilemma, uncertainty) (Morley et al., 2021a), follow, or have a dynamic relationships moral distress (moral residue, injury,

resilience, disengagement) (Canadian Nurses Association, 2017; Cartolovni et al., 2021; Epstein & Delgado, 2010; Rushton et al., 2016). Definitions of these different types of moral events are summarized in Table 1. Ethical events can be categorized as more than one type of moral event (Morley et al., 2019).

In response to the growing body of knowledge that describes key concepts of moral distress, variation has also emerged in the way in which causes of moral distress are described. Morley et al. (2021b) defines five “compounding factors,” as the avoidable and unavoidable factors that can influence moral events, be moral events, or exacerbate or mitigate moral distress. These compounding factors include: epistemic injustice, the roster lottery, conflict between one’s professional and personal responsibilities, the ability to advocate, and team dynamics (Morley et al., 2021b). However, most often, researchers have categorized the contributing factors and direct situational causes of moral distress as internal (i.e., self-imposed) and external (i.e., others-imposed) (Hamric, 2012; McAndrew et al., 2016). A frequently reported external cause of moral distress experienced by ICU nurses has included participating in end-of-life or invasive care for potentially futile patient outcomes (Browning &

Table 1

Categories and Types of Moral Events

Moral Event	Definition
Precede Moral Distress	
Moral constraint	Inability to carry out an action that is perceived as ethically correct, due to barriers or obstacles (Fourie, 2015; Morley, Ives, et al., 2019).
Moral tension	<i>Internal</i> struggle, where one perceives something as wrong, but does not articulate it openly or act on it (Morley, Bradbury-Jones, et al., 2019).
Moral conflict	<i>External</i> struggle, involves voicing and acting on ethical concerns in a way that challenges others in an attempt to address ethical event (Morley, Bradbury-Jones, et al., 2019).
Moral dilemma/conflict	In response to an ethical event, an individual identifies multiple ethical values that are applicable, but must choose one value to prioritize (Canadian Nurses Association, 2017; Morley, Bradbury-Jones, et al., 2019); <i>or</i> no choice will result in a satisfactory outcome; <i>or</i> prioritizing one consequently eliminates the equivalently valuable options.
Moral uncertainty	Knowing something is wrong but not being able to identify what is wrong, or what right action could be taken (Fourie, 2017; Morley, Bradbury-Jones, et al., 2019).
Follow Moral Distress	
Moral residue	Repeated episodes of moral distress results in accumulation or compounding effect of distress (Epstein & Delgado, 2010), may result in desensitization or burnout (Bruce et al., 2015; Epstein & Delgado, 2010)
Moral injury	“Deep emotional wound” unique to those who bear witness to trauma and partake in “immoral” action (violates moral beliefs/conscience). Outcomes are long-lasting, including internal dissonance. Differs from moral distress, moral residue and post-traumatic stress disorder, but needs further exploration. (Cartolovni et al., 2021, p 6)
Moral disengagement	Coping strategy. Disregard of ethical commitments. A nurse may then become apathetic or disengaged to the point of being unkind, non-compassionate, or even cruel to other healthcare providers and/or persons receiving care (Canadian Nurses Association, 2017).
Moral resilience	The capacity of an individual to sustain or restore their integrity in response to moral complexity, confusion, distress, or setbacks (Canadian Nurses Association, 2017; Rushton et al., 2016).

Cruz, 2018; Dodek et al., 2016; Henrich et al., 2016; McAndrew et al., 2016). Internal factors that contribute to moral distress are less understood (McAndrew et al., 2016).

Extreme contextual, social or environmental changes such as global pandemics, natural disasters, or events resulting in mass casualties often result in the need for rapid responses and disruptions in critical care environments, and may contribute to moral distress (American Association of Critical Care Nurses, 2020; Dunham et al., 2020; Lapum et al., 2021; Mehta et al., 2021). In response to the coronavirus disease-2019 (COVID-19) pandemic, Canadian critical care services were inundated by the increased demand to care for critically ill patients, under rapidly changing conditions (Gibney et al., 2022; Sharma et al., 2021). Global ICU admissions for individuals with COVID-19 ranged from 5%–38%, resulting in high occupancy, mechanical ventilation, and mortality rates (Murthy et al., 2021; Vranas et al., 2021; Wahlster et al., 2021). From 2020–2021, with each wave of the pandemic, Canadian ICUs experienced increased admissions for respiratory illnesses, with a reported 28% mortality rate in 2021 (Gibney et al., 2022). In response to this shift in working conditions, ethical events emerged, related to increased patient-to-nurse ratios, shortages of effective personal protective equipment (PPE), and increased anxiety with respect to virus transmission to family and friends and restrictions to visiting policies and practice (Binnie et al., 2021; Morley, Grady, et al., 2020; Simonovich et al., 2022). Despite the documented ethical challenges that occur during global health emergencies (Dunham et al., 2020), less was known about the particular properties and nuances of moral distress experienced by ICU nurses in such contexts, including the COVID-19 pandemic (Morley et al., 2022).

Study Purpose

Conceptual and contextual refinement is required to advance moral distress science (Deschenes et al., 2020), specifically, to inform mitigative interventions to reduce moral distress experienced by ICU nurses and the associated negative outcomes for patients and healthcare organizations. As a part of an overarching qualitative study that aimed to describe ICU nurses' personal coping strategies and desired interventions to mitigate moral distress during the COVID-19 pandemic, in this paper we present an analysis of the properties of moral distress as described by nurses and the conditions under which they perceived moral distress occurred during the pandemic. Nurses' responses to moral distress, including their moral distress scores, and their recommendations for mitigative interventions are presented in another paper (Gehrke et al., 2024).

Methods and Procedures

Research Design

In this applied health qualitative study, the principles of interpretive description methodology informed design decisions to answer the overarching research question: How do registered nurses who provided direct patient care in Canadian intensive care units during the COVID-19 pandemic describe their responses to moral distress experienced in their professional practice? Interpretive description, driven by disciplinary

inquiry, aims to address the gaps and insufficiencies in existing knowledge of a practice-based issue by generating novel data to be utilized pragmatically in the field. This methodology also aims to highlight the valuable insight of clinicians with expertise in the field or phenomena under investigation (Thorne, 2016). We achieved this by scaffolding the study, which includes a review of the literature and identifying a theoretical fore structure (Thorne, 2016). This was informed by nursing epistemology and modern conceptualizations of moral distress (Epstein et al., 2020; Hamric, 2012; Morley et al., 2019, 2021b; Rushton et al., 2016; Thorne et al., 2018). In efforts to capture the complexity of moral events that contribute to moral distress that go beyond constraint-based scenarios, we chose Morley's et al. (2019) broadened definition to inform our study. The study scaffolding, as well as the first author's (PG) disciplinary orientation and experience working as an ICU nurse, informed the formulation of the research question (Thorne, 2016). Study design and analysis were further informed and refined by study co-investigators, who brought insights grounded in their research and clinical experiences in critical care practice (JT), nursing education (RH), and nurse well-being (KC, SJ).

Context (Setting)

Locating participants with firsthand experience and expert knowledge provides rich insights into the topic of interest, strengthens study rigour and trustworthiness, and helps to produce findings that resonate with relevant research consumers (Thorne, 2016). Therefore, the exploration of the phenomenon of interest was investigated in the context of nurses' work in Canadian ICUs that serve the adult-patient population.

Sampling and Recruitment

To achieve a purposeful sample, nurses were invited to participate in this study if they identified as: 1) an individual with a current registered nursing license from a Canadian province or territory; who 2) worked within an adult ICU in a Canadian hospital; 3) at some point between March 2020 to September 2021; and who 4) self-reported experiencing at least one episode of moral distress in their professional practice during the COVID-19 pandemic. Participants were recruited via a study poster shared on social media platforms, invitations distributed by established ICU professional organizations, and snowball sampling. Participants contacted the first author via email if they were interested in receiving more information about the study.

Initially, a sample size of 20 nurses was estimated to provide an understanding of varied ways in which they experienced moral distress in the context of the COVID-19 pandemic. However, during concurrent data collection and analysis, as diversity in nurses' experiences of moral distress became evident, the need to expand the sample size was recognized. This process of *in situ* theoretical sampling allowed us to collect additional data (Gentles et al., 2015; Palinkas et al., 2013). The study sample size was increased to 40 to meet this analytic need, and in response to the significant number of ICU nurses who expressed their interest in sharing their experiences by participating in this study.

Data Collection

Aligning with the pragmatic principles of interpretive description, and to promote data triangulation and rigour, a

combination of data generation strategies and sources were employed (Jack et al., 2023; Moisey et al., 2022; Thorne, 2014, 2016). In-depth, semi-structured interviews were completed with all participants, led by one of two authors (SJ, PG), via telephone or videoconference (Table 2). The interview guide was informed by the scaffolding of the study. During interviews with participants, they were asked to reflect on at least one practice episode of moral distress experienced since March 2020, and then to describe the constructs of the moral event that led to moral distress. We also sought to learn about their responses to moral distress, as well as their recommendations for mitigative interventions. If requested prior to the interview, participants were provided with a participant-copy of the interview guide. Field notes were also maintained by the researcher during each interview.

To further contextualize interview data, and to provide a description of the sample, a demographic questionnaire, and the Measure of Moral Distress – Healthcare Professional (MMD-HP) survey were also collected from each participant. At the time of study design, the MMD-HP represented one of the most updated measurement tools of moral distress, which included up-to-date root and system level causes of moral distress (Epstein et al., 2019). The MMD-HP is a validated tool (Cronbach's 0.93) used to calculate a moral distress score, by having participants rate the frequency (0–4) and level of distress (0–4) for 27 clinical scenarios (Epstein et al., 2019). A frequency score of zero indicates that the scenario never occurs, while a score of four indicates that the scenario occurs very frequently. A distress score of zero indicates that the scenario is not distressing, while a distress score of four indicates that the scenario is very distressing. The frequency and level of distress is multiplied by one another for each item, and then cumulatively added to produce a composite moral distress score (possible score 0–432). There are also two multiple choice questions about attrition, and space for open-ended responses

to describe episodes of moral distress that were not captured in the survey (Epstein et al., 2019). Permission to use the scale was obtained (Epstein, E., personal communication, January 7, 2021).

Data Analysis

Multiple methods of analysis were applied to achieve both detailed descriptions and interpretations of the data. Quantitative data, including demographics and MMD-HP scores were analyzed with descriptive statistics using SPSS Version #28.

Contextual practice changes reported by nurses were labeled per the conceptual “4 Ss” framework (Anesi et al., 2020). Anesi et al. (2020) developed an adaptable model for hospital preparedness and surge planning for emerging infectious disease, in response to the COVID-19, and the resultant acute and extreme healthcare demands. This model includes three main components: 1) the conceptualization of and approach to healthcare capacity strain; 2) the 4Ss framework; and 3) domains of focus during a surge. The “4 Ss” framework outlines four factors to be considered when hospital services are expected to be required beyond normal capacity, and include: staff, space, stuff, and system (Anesi et al., 2020). Although our analysis does not use the model in its entirety, the review of this theory and familiarity with these concepts allowed for further refinement and definition of the categories and themes developed for this study.

Reflexive thematic analysis was used as the overarching process to inductively categorize and synthesize the qualitative data from interviews and MMD-HP open-ended responses. This approach to thematic analysis is distinctively situated with Big Q orientation (i.e., interpretivist or constructivist paradigm), aligning with the paradigms of qualitative research methodology and the nature of interpretive description design. Reflexive thematic analysis requires the research to engage in continuous and active reflexive consideration of their positionality, and how

Table 2

Semi-Structured Interview Guide (Summary)

Concept	Question: Can You Describe...
Experience of moral distress	...an example of moral distress that you experienced in your professional practice since March 2020?
Moral distress concepts	...the moral event, values, and/or contributing factors that were central to your example of moral distress?
Personal coping strategies	... your responses to your example of moral distress?
Organizational strategies	...any organizational interventions or actions taken to mitigate the moral distress you experience in your professional practice?
Recommendations	...any interventions that you would like to see from leaders, organizations, or researchers to mitigate moral distress experienced by ICU nurses?

it will shape all stages of the study (i.e., study design, data collection, data analysis) (Braun & Clarke, 2023). The first author engaged in continuous reflexive practice throughout the duration of the project, to acknowledge any personal biases that may influence the research process (Campbell et al., 2021; Thorne, 2016). The following steps of reflexive thematic analysis were followed: 1) data familiarization; 2) code generation; 3) themes construction; 4) a review for potential themes; 5) defining and naming of themes; followed by 6) production of the final reports (Braun & Clarke, 2019; Campbell et al., 2021). To increase familiarity with the data, the first author completed the transcription of the first four transcripts. The remaining audio recordings were securely sent to a professional transcriptionist for verbatim transcription with identifying information removed. To store, manage, and code data, a qualitative data analysis software (<https://www.dedoose.com/>) was used. Each transcript was then read in its entirety at least twice by the first author before open coding was initiated. From the coding of the initial 10 transcripts, a list of core codes and categories were generated. To facilitate the construction of the overall themes, steps from rapid qualitative analysis, an efficient yet robust qualitative methodology, were utilized (Hamilton, 2020; Hamilton & Finley, 2019; Maietta et al., 2021). A template was created to facilitate a focused summary of data from each transcript. Then, template summaries were entered into a matrix and used to help produce findings (Hamilton & Finley, 2019; Nevedal et al., 2021). In the final stages of analysis, to compare, contrast and find gaps within pre-existing theories, moral events (using the definitions as summarized in Table 1) and concepts from the Moral Distress Model (Morley, et al., 2021b) were used to label, sort, and organize qualitative findings.

Results

Nurses' experiences of moral distress in the context of the COVID-19 pandemic are shared. We describe the properties of moral distress, which includes two overarching conditions, as well as contributing sub-conditions, under which moral events occurred.

Participant Characteristics and Moral Distress Score

A total of 47 nurses expressed interest in this study. However, seven nurses who signed an informed consent form did not participate (no response to schedule interview $n = 4$; extenuating circumstances $n = 2$; made decision to withdraw $n = 1$). Therefore, a total of 40 ICU nurses completed a survey and an interview for this study ($n = 32$ by videoconference, $n = 8$ by telephone) between May to September 2021. The mean length of interview was 58 minutes (standard deviation [SD] = 14.6 minutes; range = 33–94 minutes). At the time of the interview, 93% ($n = 37$) of participants continued to work in an ICU, and 7% ($n = 3$) left this clinical setting (between March and July 2021). More information about participant characteristics can be found in Table 3. The mean moral distress score among this sample of nurses was 139.4 (SD = 58.2; range = 31–252), with half ($n = 20$) of the group falling within the group moderate interval (mean score = 131.4, SD = 26.3; range = 86–171). Further analysis of nurses' moral distress scores can be found in (Gehrke et al., 2024).

Moral Events Described by Nurses

Nurses described 182 episodes of moral distress, of which, 125 of these episodes were extracted from interviews and 57 episodes from participants' responses to the MMD-HP open-ended questions. The 57 episodes of moral distress reported in the open-ended MMD-HP responses were mapped out against the questionnaire scenarios and the definition of moral distress used in this study. Of those responses, 13 did not align with one of the 27 questionnaire scenarios, nor were they considered moral distress based on the definition used in this study, and were excluded (e.g., dissatisfaction with wage or nursing responsibilities). The remaining episodes of moral distress from both data sources ($n = 169$) were then categorized by moral event type. This labeling resulted in a total of 179 moral events (interviews $n = 135$, MMD-HP $n = 44$), as each episode of moral distress could be categorized as more than one type of moral event. Of the 179 moral events, most were categorized as events that precede moral distress, including moral constraint ($n = 95$) and moral dilemma ($n = 43$), followed by moral conflict ($n = 18$) and moral tension ($n = 13$). Other types of moral events described by nurses included stories of moral residue ($n = 3$), moral resilience ($n = 4$), moral disengagement ($n = 1$) and moral uncertainty ($n = 2$).

In their narratives, nurses described the contextual origin during which moral events transpired. These descriptions included reflections on pre-existing and novel moral events, in respect to the context of the COVID-19 pandemic. Consequently, we learned about the factors that contributed to the contextual origin of moral events, including the pre-existing and novel factors that occurred in response to COVID-19 (Table 4). Nurses described how these changes impacted: (1) the physical environment (i.e., space) in which they worked, (2) the number, workload, and well-being of professionals within the unit (i.e., staff), (3) the evolving demands and use of resources (i.e., stuff), and (4) the frequent changes to unit policies (i.e., systems). Many pre-existing factors that contributed to moral events, and pre-existing moral events themselves, were heightened or exacerbated in the context of the COVID-19 pandemic.

Conditions of Moral Distress: Being Heard in the Pursuit of Comprehensive, Patient-Centred Care

Regardless of the type or origin of the moral event, across nurses' descriptions of moral distress, it became evident that the complex interplay of two overarching and co-existing conditions underpinned all the associated moral events that led to their moral distress: (1) when nurses' voices were not heard; and (2) when patients' health, safety, and comfort were perceived to be compromised. Circumstances at each socioecological level of the healthcare system, where nurses' concerns were not heard, respected, or validated, prevented nurses from engaging in highly valued comprehensive care, resulting in critical conditions in which they experienced moral distress. Likewise, when factors outside of the nurses' control threatened risks to patients' welfare, moral distress occurred and further motivated them to seek opportunities to be heard in efforts to promote comprehensive, person-focused care.

Table 3*Participant and Workplace Characteristics*

Sociodemographic Variable	Frequency	%	Sociodemographic Variable	Frequency	%
Age			Workplace Characteristics		
21–30	22	55	Province		
31–40	13	32.5	Alberta	4	10
41–45+	5	12.5	British Columbia	3	7.5
Gender			Manitoba	6	15
Female	39	97.5	New Brunswick	0	0
Male	1	2.5	Newfoundland and Labrador	0	0
Other	0	0	Northwest Territories	0	0
Nursing Practice			Nova Scotia	1	1
Current ICU nurse			Nunavut	0	0
Yes	37	92.5	Ontario	25	62.5
No	3	7.5	Prince Edward Island	0	0
Years nursing (total)			Quebec	0	0
< 2	3	7.5	Saskatchewan	1	2.5
3–5	14	35	Yukon	0	0
6–10	14	35	Hospital Status		
11–20	5	12.5	Academic	25	62.5
21 +	4	10	Community	15	37.5
Years ICU nursing			ICU Level		
< 2	13	32.5	Level I	7	17.5
3–5	14	35	Level II	2	5
6–10	6	15	Level III	23	57.5
11–20	5	12.5	Unknown	8	20
21 +	2	5	<i>Note. n = 40.</i>		
Critical care registered nurse certificate			ICU = intensive care unit; Hospital status = Classification of hospital in relation to their prioritization and level of engagement in teaching, quality improvement, and research activities. No absolute definitions exist provincially or nationally. Generally, community hospitals are healthcare centres that serve a local community with the principal mandate of providing both acute and non-acute services, and lesser academic or research priorities. Conversely, academic place equivalent priorities toward clinical, academic, and research activities. Categories informed by Canadian Institute for Health Information (2020); ICU level = Categorization of ICU based on local capacity to provide certain measures of intervention and staffing. Categories informed by (Marshall et al., 2017).		
Yes	29	73			
No	10	25			
Enrolled	1	2			
Job status					
Full-time	27	67.5			
Part-time	11	27.5			
Causal	1	2.5			
Missing	1	2.5			
Average hours/week					
12–24	4	10			
25–36	5	12.5			
37–48	28	70			
48+	3	7.5			

continued...

Table 4*Staff, Space, Stuff, Systems – Nurses’ Reported Contextual Changes to Practice*

Space	Expansion/conversion of units/floors to support ICU patient care Cohorted groups of patients based on COVID-19 status Cancelling of elective/non-emergent surgeries
Staff	Shortages of staff (e.g., nurses, physicians, support staff) Changes to staffing models (e.g., team-nursing, pod-nursing, new/unqualified staff) Decreases in orientation and training for new staff Increases in burnout, exhaustion, stress Starting shifts with many unknowns (e.g., assignment, role, safety) Implementation of mandatory overtime for nurses
Stuff	Unknown effective treatment and interventions for COVID-19 patients Introduction of new interventions (e.g., proning, protected intubation) Changes to personal protective equipment protocols and use Feeling like “guinea pigs” for personal protective equipment use Wearing operating room scrubs
Systems	Frequent policy changes (i.e., visiting, nursing documentation, interventions) Out of hospital/province patient transfers Increased number of admissions and changes to patient population

Note. Adapted from Anesi, G. L., Lynch, Y., & Evans, L. (2020). A conceptual and adaptable approach to hospital preparedness for acute surge events due to emerging infectious diseases. *Critical Care Explorations*, 2(4), e0110. <https://doi.org/10.1097/CCE.00000000000000>

Nurses described their fundamental motivations to provide comprehensive care that upheld personal or professional standards, that aligned with patients’ self-reported priority needs, and that reduced patients’ experiences of suffering or “torture.” One nurse with over 21 years of ICU nursing experience stated, “You’ll hear a lot of ICU nurses talk about— they feel like they’re torturing people.” Nurses defined torture as pain and suffering, secondary to (a) prolonged interventions and/or (b) invasive interventions for outcomes that did not align with; (i) patient-centered goals of care (i.e., per their advanced care directive or verbally expressed) or (ii) the nurses’ perception of quality of life. Nurses perceived a poor quality of life, as one riddled with pain, suffering, or significantly less physical, social, or emotional capacity than the patient’s pre-hospital life. Some common examples of “torture” included prolonged intubations, leading to degrading skin integrity and muscle wasting, and providing advanced cardiac life support, which was perceived as painful or “more harm than good.” These events were particularly distressing when the patient had a poor prognosis.

As working conditions rapidly changed during the pandemic, nurses perceived that organizations were acceptive of lower standards of care due to emergency measures and encouraged nurses to “lower your practice expectations.” Regardless of these organizational beliefs, as one nurse explains, it was challenging for nurses to accept that patients might receive a substandard level of care,

.... our workload has doubled and the resources from the hospital have not So, we’re having a hard time achieving the same standards that we would achieve before.... they’re not getting ICU level care anymore. They’re getting a big step below that because we just can’t keep up. So, I would say the hospital probably deems that we’re doing an appropriate job, but any ICU nurse worth her salt is not happy with what the current [situation is like].

Moral distress occurred when nurses were not able to adhere to the usual standard of care, as well as their personal expectations for care their patients “deserved,” particularly during end-of-life. These conditions of moral distress were influenced by high nurse-to-patient ratios, which resulted in less time available to dedicate to comprehensive care for each patient. This prevented nurses from developing a holistic understanding of their patients, and when nurses felt unprepared for interdisciplinary rounds, they described moral distress, shame, and guilt. They also reported moral distress when they did not have time to provide interventions at the standard interval (e.g., repositioning, mouth care, perineum care), which led to patient discomfort, suffering, or poor outcomes (e.g., compromised skin integrity, tooth decay). Normally, these regular intervals of care also allowed for nurses to complete thorough assessments. When this could not occur, nurses described that they “missed things,” like new sites of bleeding, bed sores, or subtle changes to respiratory patterns and cardiac rhythms. This further compounded nurses’ moral distress.

Sub-Conditions of Moral Distress

Underpinning these two dominant, co-existing conditions of moral distress, were pre-existing and novel sub-conditions of organizational culture and systemic processes. Pre-existing conditions were those which were present prior to the pandemic, and which may have been exacerbated in response to the new contextual changes to practice. These pre-existing sub-conditions of moral distress included lack of respect for nurses' expert knowledge, and poor cultures and systems of communication. A novel sub-condition that emerged under the unique contextual circumstances of the pandemic was organizational responses to safety and staffing.

Lack of Respect for Expert Nursing Knowledge

At the bedside, nurses described feeling like a “puppet” or an “actor,” whereby, despite their expert nursing knowledge, patient concerns expressed by nurses were frequently disregarded by team members, at each level of the healthcare system. At a unit level, moral distress occurred when nurses felt they had to carry out orders against their personal or professional beliefs, that prolonged patient suffering, or resulted in care that was not person-centered. This culture was affected by power hierarchies within the healthcare team that influenced how others valued nursing input, as well as the impact of nurses' scope of practice. As one nurse described,

I don't get to make the big decisions, but I am the agent that's doing those big decisions. And so, it becomes where I don't have a decision about how the care is being decided upon, sometimes because it's a physician's decision or it's a family decision, but I'm the actor in the actual role of the of the decision...

Many nurses reported that members of the healthcare team “don't care what nurses think.” They described situations where they perceived that their contributions were dismissed, despite advocating and sharing their expert knowledge on several occasions to multiple different clinicians.

At a systems level, nurses felt excluded from decision-making that directly affected their work, most notably, decisions or policies that impacted their ability to provide high quality patient-centered care or impacted the safety and well-being of themselves and others. Consequently, nurses were left feeling “in the middle,” whereby, they were responsible for upholding organizational policies without knowledge of leadership's decision-making processes. For example, several nurses described the complexity of the layered moral events associated with enforcing frequently changing patient visitor policies, particularly at end-of-life. Nurses felt morally distressed when enforcing restricted visitation and asking patients' family and friends to select preferential visitors. They also experienced moral distress when enforcing the visitors to don the required PPE, preventing families from having physical contact at end-of-life or during times of uncertainty, while also recognizing the importance of mitigating viral transmission. Another nurse with more than 21 years of ICU nursing experience, described the difficulty in mandating these policies. She stated,

...they can't have that physical touch. And when people are dying, that— being able to sit and hold a hand, and being able to hug somebody, and give them that last kiss goodbye. That's part of the humanity of nursing, and... To have that taken away, and being told that, “No you can't” at what point do we have to say, ‘Let's take the calculated risk,’ but give them that final little piece of closure that they got to kiss their mom goodbye.... It just feels wrong, is the only way I can put it. It's that, fundamentally, we're supposed to be able to be with people.

At a community level, nurses described significant frustration with both public policy and leadership, and community accountability and behaviour in response to public health guidelines. Nurses perceived that their voices and input were excluded from important conversations and decision-making in response to the pandemic, at all levels of government. Moreover, nurses witnessed political actions such as nursing staffing cuts and wage suppression, and the disregard for evidenced-based practice when establishing infection prevention and control policies. Nurses' emotional reflections of such decision-making at a public policy level demonstrated the downstream effect that created and exacerbated conditions of moral distress.

Culture and Systems of Communication

Nurses reported several components and ingrained processes of communication that contributed to conditions of moral distress. Commonly, nurses described inconsistent and unclear communication amongst the healthcare team, and between the team, patients, and families. Most nurses described poor communication about goals of care, prognoses, and end-of-life care, including inconsistent approaches to or exclusion of these conversations. Nurses described that many clinicians were not equipped with the knowledge, tools, or confidence in leading these discussions, and therefore, these topics of conversations were delayed, avoided, or ambiguous. Furthermore, within this space of discomfort, clinicians often tried to “spare feelings” by minimizing poor outcomes or prognoses. When these types of responses occurred, nurses perceived that patients and families were left with unclear and dishonest information. Bounded by the limits to the nursing scope of practice, nurses felt conflicted or constrained from openly discussing care plans or prognoses with patients and families, which further contributed to their moral distress. One nurse described the moral distress that occurred in response to this knowledge disparity; “it [pause] makes it worse in the end.... Just not being truthful. This person has so much trust in you, they don't know any better, and to not be honest with them in such a hard time...” Nurses described that without these conversations, patients and families could not make informed decisions about goals of care, which often delayed decision-making and prolonged invasive, high levels of care.

Nurses reported that these moral events were prevalent prior to the COVID-19 pandemic, associated with high nurse-to-patient ratios that occurred in response to understaffing and staff burnout. However, the emerging staffing crisis, as well as increased burnout and psychological distress of staff, contributed to a

higher frequency of these events. Furthermore, in response to increased patient acuity and number of admissions, physicians had less time to spend completing interdisciplinary rounds. Nurses perceived that less formal time to communicate their concerns to the broader team significantly impacted their ability to address the patient needs they had identified. Moreover, challenges with virtual communication (i.e., lack of electronic devices) and restricted visiting policies contributed considerably to poor quality of communication between healthcare teams and families, and further increased nursing workload as they navigated these barriers. The complexity of communication challenges increased further when there was limited family engagement in care planning, differences in languages, or personal care needs that influenced the length and level of care provided. As reported by nurses, moral events occurred when they did not have the time to provide detailed updates, when they had to witness or facilitate difficult conversations over the phone (i.e., end-of-life, goals of care), when virtual communication delayed care-decisions and prolonged suffering, or when the quality of their time connecting with patients' caregivers was deemed inadequate.

Safety Prioritization of Self, Patients, and Others

Risk to Physical and Psychological Safety. In response to the COVID-19 pandemic, drastic changes to nurses' day-to-day practice posed risks to their personal safety and well-being. Nurses recalled regularly navigating the risk of transmissible diseases in the context of their pre-pandemic practice; however, we learned that during COVID-19, new moral events related to risk of transmission occurred. To reduce exposure, nurses were asked to bundle care, which was an approach where tasks were grouped together to limit the number entries into the patients' rooms. They were also asked to don appropriate PPE with each room entry. Nurses recognized that bundled care and PPE were imperative to their own safety but described that it delayed responses to emergent (e.g., cardiac arrest) and non-urgent (e.g., mouth care) patient care needs, which could result in significantly poor outcomes for patients. Moral distress occurred when nurses felt they had to prioritize their safety against the well-being of their patient, making statements like, "Oh, it totally goes against what I've... learned as a registered nurse." Nurses also described that PPE limited their ability to engage in therapeutic contact and emotional support (i.e., holding hands, hugging) with patients and their caregivers. This affected their ability to establish trusting therapeutic relationships. Nurses perceived that the quantity and restrictiveness of the PPE limited the humanistic aspect of patient care, causing moral distress. As one nurse described:

What makes it [nursing] so unique is, not only the science behind, it but the human connection. Being able to physically touch our patients with our hands, help them.... we're staring at them through five layers of PPE on; the mask, goggles, face shield on. So, they don't even really know who their nurses— what their nurses look like. So, I think it really affects that human interaction, and really dehumanizes the whole experience.... So, I think the whole situation is really awful, and it makes us feel terrible.

Across all narratives, pervasive conflicts occurred between values of promoting collective good and reducing the risk of transmission, against the need to provide patient-centred care characterized by dignity and respect.

Team Staffing Model. In response to high patient acuity, an increased number of patient admissions, and worsened staffing shortages, most organizations initiated a team-nursing model of care. Although this model varied between organizations and across provinces, typically, ICU nurses were assigned as team leaders for a group of healthcare providers recruited from retirement or redeployed from units that care for patients of lower acuity or of a different population (e.g., pediatrics, out-patient services). Therefore, ICU nurses were responsible for overseeing patient care and providing critical care nursing interventions (e.g., titrating and administering high-risk drugs, assessment of cardiac rhythms) for all patients (4–6) assigned to the team.

Most participants described moral distress in response to the delivery of care under the new staffing model, perceived as a threat to patient safety and quality of care. Most notably, ICU nurses expressed concerns about the provision of care provided by unqualified staff. The complexity of their moral distress was situated in two main concerns: (1) nurses felt conflicted between respecting their peers' nursing knowledge, while also recognizing their lack of specialized skills; and (2) nurses had difficulty trusting their peers to adhere to the ICU standards of care, make correct clinical decisions, document appropriately, or catch the subtle clinical changes indicative of significant shifts in a patient's status. These concerns were particularly prevalent in the context of emergencies, where nurses rely on one another to make quick, critical decisions. Moral distress occurred when unqualified staff, limited by their skills, were not able to meet the needs of the team, and ultimately, the patient.

Furthermore, to compensate for the lack of orientation and training, ICU nurses were responsible for teaching new staff essential skills, policies, and procedures, and orienting them to unit resources and flow. One nurse reported positive outcomes of teaching; however, most ICU nurses described the moral distress that occurred when having to prioritize between patient care and teaching.

Seeing Colleagues Struggle. In the context of the new staffing model, nurses also described the shift from a collaborative, team-oriented work environment to one characterized more by isolated work. As one nurse described, "you're in your own zone and you don't generally leave that zone, 'cause you don't have time." Nurses' stories revealed patterns of moral events grounded in witnessing peers' difficulties with managing their workload, and consequently, threats to patient safety and standards of care. Moral distress occurred when nurses had to choose between caring for the patients within their own care team and helping their colleagues. Nurses identified that regardless of their chosen action, the standard of care for all patients was at risk.

Similar moral events also occurred for a subset of charge nurses in this study, who were responsible for overseeing the day-to-day activities of the unit, supporting staff, managing conflicts,

and facilitating patient flow. All charge nurses in this study reported moral distress in response to making nursing assignments. They described their attempt to balance nurse and patient safety when assigning patients to new or redeployed nurses, when creating team-nursing assignments, or when allocating nurse breaks. One participant, who was a charge nurse for the first time during the pandemic, described:

...the ethical dilemma, for me, in this situation, with being in charge, was trying to make sure that the staff were practicing safely and that the patients were safe and trying to manage all that. And trying to get people for their own breaks because [pause] they need them. We needed them. Especially during the pandemic, everybody was so exhausted.

Similarly, nurses described the moral distress they experienced when they were asked by the organization to pick up over-time or extra shifts. Moral conflict occurred while they considered the outcomes of their peers working understaffed, and their own physical and mental well-being.

Discussion

In this analysis of data from the overarching interpretive descriptive study, we documented the properties of moral distress experienced Canadian adult-ICU nurses working in this setting during the COVID-19 pandemic. This study advances our conceptualization of moral distress by identifying the key concepts of this phenomenon during a global public health emergency. The Moral Distress Model (Morley et al., 2021b) served as a useful framework to explore concepts of moral distress with ICU nurses. While labeling the moral events described by nurses in this study was helpful for understanding the broad range of events that contributed to their moral distress, most importantly, we learned that consistent themes spanned across all types of moral events. These findings provoke questions about the utility of labeling these events, particularly when considering the development of interventions to mitigate moral distress. In a recent study by Morley (2023), in which the authors explored the utilization of resources based on sub-type of moral distress, statistically significant differences were found between resources used (i.e., speaking with senior colleague) and moral event type (i.e., moral dilemma distress). Our study reinforces the authors' discussion, in which they identify the need for more research to explore how moral event types influences the types of interventions perceived as effect by nurses (Morley et al., 2023).

Confirming Conditions of Moral Distress

Authors have previously described causes of moral distress as both practice level factors (Atashzadeh-Shoorideh et al., 2021; Morley et al., 2021b) or broad conditions (Morley et al., 2021b). Analysis of our data identified that moral distress manifests for ICU nurses in response to the complex interplay of two overarching, broad practice conditions: (1) when nurses' voices, driven by efforts to optimize patient care at an exceptionally high standard, from both a biomedical and psychosocial perspective, are not heard; and (2) when patients received substandard levels of care, that was not patient-centered, pain free,

or misaligned with organizational, professional, or personal standards. Among existing findings of moral distress experienced by ICU nurses, other authors have similarly described the critical influence of nurses' voices being heard and patient conditions, in both pre-pandemic and pandemic contexts. Caram et al. (2018) explored moral distress through a lens of virtue ethics, with a sample of ICU nurses ($n = 11$) and surgical nurses ($n = 5$). Their findings highlight how in the "real-world" context of practice, nurses deviate from their nursing telos (e.g., goal of practice) and are often left unseen during ethical challenges, which leads to moral distress. Further substantiating our findings, in a qualitative descriptive study of 111 ICU nurses, McAndrew et al. (2020) highlighted that when nurses' voices are marginalized in response to organizational cultures, practices, and priorities, patients can experience suffering and consequently, nurses can experience moral distress. These findings are reinforced in a scoping review by Riedel et al. (2022), that mapped studies of moral distress, moral stressors, and moral injury experienced by healthcare workers during COVID-19. Among several factors contributing to ethical events, authors underscored the lack of respect for nurses' autonomy and their exclusion from decision-making, as well as conditions of unsafe or substandard care (Riedel et al., 2022). Moreover, years of work in this field have documented that substandard care, ineffective pain control, or inadequate patient conditions are central to moral distress experienced by nurses (Atashzadeh-Shoorideh et al., 2021; McAndrew et al., 2016). Nurses confirmed this narrative, and corroborated that participating in end-of-life care, or invasive, aggressive care, for potentially futile patient outcomes are one of the most frequent and impactful sources of moral distress (Browning & Cruz, 2018; Dodek et al., 2016; Epstein et al., 2020; McAndrew et al., 2016).

Our findings also highlight the underlying and pre-existing cultures, systems, and processes, at various levels of the healthcare system, that contribute to or compound the broad conditions in which moral events occur. Aligning with the literature, nurses' feelings of powerlessness, influenced by the culture and beliefs of the nurses' roles within the healthcare team, and consequently, the disregard of their expert knowledge, prevented nurses from equally contributing to patient care decisions (Caram et al., 2018; McAndrew & Hardin, 2020). Nurses' accounts also confirmed pre-existing challenges with interdisciplinary collaboration, partial to cultures and systems of poor communication, inconsistent approaches to care, and informal and formal hierarchies, contributed significantly to moral events (Epstein et al., 2020; Hancock et al., 2020; Henrich et al., 2016, 2016; McAndrew et al., 2016; McAndrew & Hardin, 2020).

Capturing Contextual Influences on Moral Distress

In the context of our study during the COVID-19 pandemic, pre-existing moral events were further amplified in both frequency and intensity, and novel moral events also emerged. Consequently, conditions in which nurses' voices were not heard or validated and situations of compromised patient care, were exacerbated (Moore et al., 2022; Trachtenberg et al., 2022). Nurses in this study emphasized the severe impact of

COVID-19 on the quality of care, due to factors like poor staffing levels, increased number of patient admissions, heightened patient acuity, and barriers to communication such as virtual modalities and restrictive visitor policies (Kissel et al., 2023).

With extreme levels of uncertainty, and lack of knowledge and understanding of the novel virus, there was a priority to reduce transmission to staff, their loved ones, as well as patients and their families. Consequently, on a regular basis, nurses evaluated and prioritized their own safety, against the needs of their patient — a significant shift in the guiding culture of nursing practice. Similarly, Trachtenberg et al. (2021) described that amongst ICU healthcare workers ($n = 18$), nurses ($n = 16$) experienced moral distress when they were required to risk the safety of themselves and their loved ones, to meet patient care needs. Although nurses in our study commented on the moral distress they experienced in response to fear of transmission, most were more concerned about limiting their interaction with their patients, and the implications on quality of care. Moreover, nurses experienced moral distress in response to the risk to quality of care and patient safety posed by new models of care (e.g., team nursing), developed and integrated in an effort to address pre-existing staffing shortages exacerbated by the pandemic (Andersson et al., 2022; Romero-García et al., 2022). Implications of these emerging contextual factors that contributed to nurses' moral distress, that were identified in this study, are important for informing future emergency preparedness (i.e., intervention development, decision-making frameworks). In a separate analysis of study data, we describe nurses' recommendations for organizational-based mitigative interventions situated in both pandemic and non-pandemic contexts (Gehrke et al., 2024).

Strengths and Limitations

The credibility of this study was maintained and informed by Thorne's (2016) evaluative criteria. The epistemological integrity and disciplinary relevance of this study were achieved through the development of a research question that was congruent with the purpose of interpretive description and was grounded in the nursing epistemology. The application and consistent use of scaffolding, informed by a theoretical fore-structure, maintained representative credibility and analytic logic. Interpretive authority was achieved through the triangulation of data multiple sources (e.g., interview and survey data) and thoughtful clinician test, to provide evidentiary support for truth claims and conclusions. Finally, our findings address and discuss contextual awareness, recognizing the unique influence of the COVID-19 pandemic on nurses' experiences of moral distress.

A few limitations are noted. First, given the size of the study sample ($n=40$), findings from this study may not explicitly reflect the experiences of all Canadian critical care nurses. Second, we recognize that those who expressed interest to participate in this study inherently represent nurses who have experienced moral distress in their practice and may have different experiences from those who have not. Third, given the large percentage of female nurses in this study, these findings may not reflect the experiences of those who do not identify as

female. Fourth, the demographic survey distributed to nurses in this study was developed at the beginning of 2021, and therefore, novel concepts that emerged in response to the evolving pandemic (e.g., team-nursing) were not captured in the survey. Finally, the authors acknowledge that the MMD-HP aligns with a narrower definition of moral distress, while the broadened definition informed this study. The MMD-HP was selected because of its updated approach to measuring moral distress. However, to further promote rigour, future studies may endeavour to choose a tool and framework that have consistent approaches to defining concepts of moral distress.

Conclusion

This study advances and refines our knowledge of key properties of moral distress. Nurses confirmed existing knowledge about the types of moral events experienced in their professional practice, while also highlighting novel contextual changes that influenced pre-existing and emergent moral events. However, it is most important to focus on the broad conditions in which moral distress occurred, as these were prevalent across pre-pandemic and pandemic contexts. We learned that circumstances in which nurses' voices are not equally valued in decision-making at each level of the healthcare system and conditions of substandard levels of patient care, were further exacerbated in the context of a global pandemic. Therefore, it is important that in the next steps of research, particularly interventional studies, seek to explore strategies that influence these broad conditions of moral distress.

Ethics Approval

The study protocol was approved by the Hamilton Integrated Research Ethics Board (#13074). Participants completed a signed, informed consent using the online survey platform Lime Survey. A copy was then signed and returned by the research team and was verbally reviewed and confirmed at the beginning of each interview. Participants were advised that the conversation could elicit an emotional response and were given the opportunity to take a break or permanently end the interview at any time. A distress protocol was available to implement if a participant experienced a significant emotional response during or after the interview. All data remained confidential, with identifying information removed from transcripts.

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Conflict of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

REFERENCES

- American Association of Critical Care Nurses. (2020, August 31). AACN position statement: Moral distress in times of crisis. <https://www.aacn.org/policy-and-advocacy/aacn-position-statement-moral-distress-in-times-of-crisis#:~:text=AACN's%20Position,exacerbated%20in%20times%20of%20crisis>.
- Andersson, M., Nordin, A., & Engström, Å. (2022). Critical care nurses' perception of moral distress in intensive care during the COVID-19 pandemic – A pilot study. *Intensive and Critical Care Nursing*, 72, 1–7. <https://doi.org/10.1016/j.iccn.2022.103279>
- Anesi, G. L., Lynch, Y., & Evans, L. (2020). A conceptual and adaptable approach to hospital preparedness for acute surge events due to emerging infectious diseases. *Critical Care Explorations*, 2(4), 1–7. <https://doi.org/10.1097/CCE.0000000000000110>
- Arnold, T. C. (2020). Moral distress in emergency and critical care nurses: A metaethnography. *Nursing Ethics*, 27(8), 1–13. <https://doi.org/10.1177/0969733020935952>
- Atashzadeh-Shoorideh, F., Tayyar-Iravanlou, F., Ahmadian Chashmi, Z., Abdi, F., & Svetic Cacic, R. (2021). Factors affecting moral distress in nurses working in intensive care units: A systematic review. *Clinical Ethics*, 16(1), 25–36. <https://doi.org/10.1177/1477750920927174>
- Binnie, A., Moura, K., Moura, C., D'Aragon, F., & Tsang, J. L. Y. (2021). Psychosocial distress amongst Canadian intensive care unit healthcare workers during the acceleration phase of the COVID-19 pandemic. *PLOS ONE*, 16(8), 1–15. <https://doi.org/10.1371/journal.pone.0254708>
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597. <https://doi.org/10.1080/2159676X.2019.1628806>
- Braun, V., & Clarke, V. (2023). Is thematic analysis used well in health psychology? A critical review of published research, with recommendations for quality practice and reporting. *Health Psychology Review*, 17(4), 695–718. <https://doi.org/10.1080/17437199.2022.2161594>
- Browning, E. D., & Cruz, J. S. (2018). Reflective debriefing: A social work intervention addressing moral distress among ICU nurses. *Journal of Social Work in End-of-Life & Palliative Care*, 14(1), 44–72. <https://doi.org/10.1080/15524256.2018.1437588>
- Bruce, C. R., Miller, S. M., & Zimmerman, J. L. (2015). A qualitative study exploring moral distress in the ICU team: The importance of unit functionality and intrateam dynamics. *Critical Care Medicine*, 43(4), 823–831. <https://doi.org/10.1097/CCM.0000000000000822>
- Campbell, K. A., Orr, E., Duperos, P., Nguyen, L., Li, L., Whitmore, C., Gehrke, P., Graham, L., & Jack, S. M. (2021). Reflexive thematic analysis for applied qualitative health research. *The Qualitative Report*, 26(6), 2011–2028. <https://doi.org/10.46743/2160-3715/2021.5010>
- Campbell, S. M., Ulrich, C. M., & Grady, C. (2016). A broader understanding of moral distress. *The American Journal of Bioethics*, 16(12), 2–9. <https://doi.org/10.1080/15265161.2016.1239782>
- Canadian Institute for Health Information. (2020). *Hospital beds staffed and in operation, 2018–2019*. <https://www.cihi.ca/en/access-data-reports/results?query=hospital+beds&Search+Submit=>
- Canadian Nurses Association. (2017). *Code of ethics*. <https://www.cna-aic.ca/~media/cna/page-content/pdf-en/code-of-ethics-2017-edition-secure-interactive>
- Caram, C. S., Peter, E., & Brito, M. J. (2019). Invisibility of the self: Reaching for the telos of nursing within a context of moral distress. *Nursing Inquiry*, 26(e12269), 1–8. <https://doi.org/10.1111/nin.12269>
- Cartolovni, A., Stolt, M., Scott, P. A., & Suhonen, R. (2021). Moral injury in healthcare professionals: A scoping review and discussion. *Nursing Ethics*, 28(5), 1–13. <https://doi.org/10.1177/0969733020966776>
- Corley, M. C. (2002). Nurse moral distress: A proposed theory and research agenda. *Nursing Ethics*, 9(6), 636–650. <https://doi.org/10.1191/0969733002ne557oa>
- Deschenes, S., Gagnon, M., Park, T., & Kunyk, D. (2020). Moral distress: A concept clarification. *Nursing Ethics*, 27(4), 1127–1146. <https://doi.org/10.1177/0969733020909523>
- Dodek, P. M., Wong, H., Norena, M., Ayas, N., Reynolds, S. C., Keenan, S. P., Hamric, A., Rodney, P., Stewart, M., & Alden, L. (2016). Moral distress in intensive care unit professionals is associated with profession, age, and years of experience. *Journal of Critical Care*, 31, 178–182. <https://doi.org/10.1016/j.jcc.2015.10.011>
- Dunham, A. M., Rieder, T. N., & Humbyrd, C. J. (2020). A bio-ethical perspective for navigating moral dilemmas amidst the COVID-19 pandemic. *Journal of the American Academy of Orthopaedic Surgeons*, 28(11), 417–476. <https://doi.org/10.5435/JAAOSD2000371>
- Epstein, E. G., & Delgado, S. (2010). Understanding and addressing moral distress. *The Online Journal of Issues in Nursing*, 15(3). <https://preprodoin.nursingworld.org/table-of-contents/volume-15-2010/number-3-september-2010/understanding-moral-distress/>
- Epstein, E. G., Haizlip, J., Liaschenko, J., Zhao, D., Bennett, R., & Marshall, M. F. (2020). Moral distress, mattering, and secondary traumatic stress in provider burnout: A call for moral community. *AACN Advanced Critical Care*, 31(2), 146–157. <https://doi.org/10.4037/aacnacc2020285>
- Epstein, E. G., Whitehead, P. B., Prompahakul, C., Thacker, L. R., & Hamric, A. B. (2019). Enhancing understanding of moral distress: The measure of moral distress for health care professionals. *AJOB Empirical Bioethics*, 10(2), 113–124. <https://doi.org/10.1080/23294515.2019.1586008>
- Forozeiyi, D., Vanderspank-Wright, B., Bourbonnais, F. F., Moreau, D., & Wright, D. K. (2019). Coping with moral distress – The experiences of intensive care nurses: An interpretive descriptive study. *Intensive and Critical Care Nursing*, 53, 23–29. <https://doi.org/10.1016/j.iccn.2019.03.002>
- Fourie, C. (2017). Who is experiencing what kind of moral distress? Distinctions for moving from a narrow to broad definition of moral distress. *AMA Journal of Ethics*, 19(6), 578–584. <https://doi.org/10.1001/journalofethics.2017.19.6.nlit1-1706>
- Gehrke, P., Campbell, K., Tsang, J. L. Y., Hannon, R. A., & Jack, S. M. (2024). Canadian intensive care unit nurses' responses to moral distress during the COVID-19 pandemic, and their recommendations for mitigative interventions. *Journal of Advanced Nursing*, 00. <https://doi.org/10.1111/jan.16135>
- Gentles, S. J., Charles, C., Ploeg, J., & McKibbin, K. A. (2015). Sampling in qualitative research: Insights from an overview of the methods literature. *The Qualitative Report*, 20(11), 1772–1789.
- Gibney, R. T. N., Blackman, C., Fan, E., Fowler, R., Gauthier, M., Johnston, C., Katulka, R. J., Marcushmer, S., Menon, K., Miller, T., Paunovic, B., & Tanguay, T. (2022). *COVID-19 pandemic: The impact on Canada's intensive care units*. Royal Society of Canada. https://rsc-src.ca/sites/default/files/ICU%20PB_EN_0.pdf

- Hamilton, A. B. (2020). *Rapid qualitative analysis: Updates & developments* [PowerPoint]. https://www.hsrdr.research.va.gov/for_researchers/cyber_seminars/archives/3846-notes.pdf
- Hamilton, A. B., & Finley, E. P. (2019). Qualitative methods in implementation research: An introduction. *Psychiatry Research*, 280, 1–18. <https://doi.org/10.1016/j.psychres.2019.112516>
- Hamric, A. B. (2012). Empirical research on moral distress: Issues, challenges, and opportunities. *HEC Forum*, 24, 39–49. <https://doi.org/10.1007/s10730-012-9177-x>
- Hancock, J., Witter, T., Comber, S., Daley, P., Thompson, K., Candow, S., Follett, G., Somers, W., Collins, C., White, J., & Kits, O. (2020). Understanding burnout and moral distress to build resilience: A qualitative study of an interprofessional intensive care unit team. *Canadian Journal of Anesthesia*, 67, 1541–1548. <https://doi.org/10.1007/s12630-020-01789-z>
- Henrich, N. J., Dodek, P. M., Alden, L., Keenan, S. P., Reynolds, S., & Rodney, P. (2016). Causes of moral distress in the intensive care unit: A qualitative study. *Journal of Critical Care*, 35, 57–62. <https://doi.org/10.1016/j.jccr.2016.04.033>
- Henrich, N. J., Dodek, P. M., Gladstone, E., Alden, L., Keenan, S. P., Reynolds, S., & Rodney, P. (2017). Consequences of moral distress in the intensive care unit: A qualitative study. *American Journal of Critical Care*, 26(4), e48–e57. <https://doi.org/10.4037/ajcc2017786>
- Jack, S. M., Orr, E., Campbell, K. A., Whitmore, C., & Cammer, A. (2023). A framework for selecting data generation strategies in qualitative health research studies. *Journal of Human Nutrition and Dietetics*, 36, 1480–1495. <https://doi.org/10.1111/jhn.13134>
- Jameton, A. (1984). *Nursing practice: The ethical issues*. Prentice Hall.
- Jameton, A. (2017). What moral distress in nursing history could suggest about the future of health care. *AMA Journal of Ethics*, 19(6), 617–628. <https://doi.org/10.1001/journalofethics.2017.19.6.mhst1-1706>
- Kissel, K. A., Filipek, C., & Jenkins, J. (2023). Impact of the COVID-19 pandemic on nurses working in intensive care units: A scoping review. *Critical Care Nurse*, 43(2), 55–63. <https://doi.org/10.4037/ccn2023196>
- Lapum, J., Nguyen, M., Fredericks, S., Lai, S., & McShane, J. (2020). “Goodbye ... through a glass door”: Emotional experiences of working in COVID-19 acute care hospital environments. *Canadian Journal of Nursing Research*, 53(1), 5–15. <https://doi.org/10.1177/0844562120982420>
- Maietta, R., Mihas, P., Swartout, K., Petruzzelli, J., & Hamilton, A. B. (2021). Sort and sift, think and shift: Let the data be your guide an applied approach to working with, learning from, and privileging qualitative data. *The Qualitative Report*, 26(6), 2045–2060. <https://doi.org/10.46743/2160-3715/2021.5013>
- Marshall, J. C., Bosco, L., Adhikari, N. K., Connolly, B., Diaz, J. V., Dorman, T., Fowler, R. A., Meyfroidt, G., Nakagawa, S., Pelosi, P., Vincent, J.-L., Vollman, K., & Zimmerman, J. (2017). What is an intensive care unit? A report of the task force of the World Federation of Societies of Intensive and Critical Care Medicine. *Journal of Critical Care*, 37, 270–276. <https://doi.org/10.1016/j.jccr.2016.07.015>
- McAndrew, N. S., & Hardin, J. B. (2020). Giving nurses a voice during ethical conflict in the ICU. *Nursing Ethics*, 15(4), 1–14. <https://doi.org/10.1177/0969733020934148>
- McAndrew, N. S., Leske, J., & Schroeter, K. (2016). Moral distress in critical care nursing: The state of the science. *Nursing Ethics*, 25(5), 552–570. <https://doi.org/10.1177/0969733016664975>
- Mehta, S., Machado, F., Kwizera, A., Papazian, L., Moss, M., Azoulay, E., & Herridge, M. (2021). COVID-19: A heavy toll on health-care workers. *The Lancet: Respiratory Medicine*, 9, 226–228. [https://doi.org/10.1016/S2213-2600\(21\)00068-0](https://doi.org/10.1016/S2213-2600(21)00068-0)
- Moisey, L. L., Campbell, K. A., Whitmore, C., & Jack, S. M. (2022). Advancing qualitative health research approaches in applied nutrition research. *Journal of Human Nutrition and Dietetics*, 35(2), 1–12. <https://doi.org/10.1111/jhn.12989>
- Moore, D. J., Dawkins, D., Hampton, M. D., & McNiesh, S. (2022). Experiences of critical care nurses during the early months of the COVID-19 pandemic. *Nursing Ethics*, 29(3), 540–551. <https://doi.org/10.1177/09697330211043273>
- Morley, G., Bena, J. F., Morrison, S. L., & Albert, N. M. (2023). Sub-categories of moral distress among nurses: A descriptive longitudinal study. *Nursing Ethics*, 30(6), 885–903. <https://doi.org/10.1177/09697330231160006>
- Morley, G., Bradbury-Jones, C., & Ives, J. (2021a). Reasons to re-define moral distress: A feminist empirical bioethics analysis. *Bioethics*, 35(1), 61–71. <https://doi.org/10.1111/bioe.12783>
- Morley, G., Bradbury-Jones, C., & Ives, J. (2021b). The moral distress model: An empirically informed guide for moral distress interventions. *Journal of Clinical Nursing*, 31(00), 1–18. <https://doi.org/10.1111/jocn.15988>
- Morley, G., Copley, D. J., Field, R., Zelinsky, M., & Albert, N. M. (2022). Responder: A qualitative study of ethical issues faced by critical care nurses during the COVID-19 pandemic. *Journal of Nursing Management*, 30(7), 1–13. <https://doi.org/10.1111/jonm.13792>
- Morley, G., Grady, C., McMarthy, J., & Ulrich, C. M. (2020). COVID-19: Ethical challenges for nurses. *The Hastings Center Report*, 50(3), 35–39. <https://doi.org/10.1002/hast.1110>
- Morley, G., Ives, J., Bradbury-Jones, C., & Irvine, F. (2019). What is ‘moral distress’? A narrative synthesis of the literature. *Nursing Ethics*, 26(3), 646–662. <https://doi.org/10.1177/0969733017724354>
- Murthy, S., Archambault, P. M., Atique, A., Carrier, F. M., Cheng, M. P., Codan, C., Daneman, N., Dechert, W., Douglas, S., Fiest, K. M., Fowler, R., Goco, G., Gu, Y., Guerguerian, A.-M., Hall, R., Hsu, J. M., Joffe, A., Juvet, P., Kelly, L., ... for the SPRINT-SARI Canada Investigators and the Canadian Critical Care Trials Group. (2021). Characteristics and outcomes of patients with COVID-19 admitted to hospital and intensive care in the first phase of the pandemic in Canada: A national cohort study. *CMAJ Open*, 9(1), E181–E188. <https://doi.org/10.9778/cmajo.20200250>
- Nathaniel, A. K. (2006). Moral reckoning in nursing. *Western Journal of Nursing Research*, 28(4), 419–438. <https://doi.org/10.1177/0193945905284727>
- Nevedal, A. L., Reardon, C. M., Opra Widerquist, M. A., Jackson, G. L., Cutrona, S. L., White, B. S., & Damschroder, L. J. (2021). Rapid versus traditional qualitative analysis using the Consolidated Framework for Implementation Research (CFIR). *Implementation Science*, 16(67), 1–12. <https://doi.org/10.1186/s13012-021-01111-5>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2013). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>
- Riedel, P.-L., Kreh, A., Kulcar, V., Lieber, A., & Juen, B. (2022). A scoping review of moral stressors, moral distress and moral injury in healthcare workers during COVID-19. *International Journal of Environmental Research and Public Health*, 19, 1–20. <https://doi.org/10.3390/ijerph19031666>
- Romero-García, M., Delgado-Hito, P., Gálvez-Herrer, M., Ángel-Sesmero, J. A., Velasco-Sanz, T. R., Benito-Aracil, L., & Heras-La Calle, G. (2022). Moral distress, emotional impact and coping in intensive care unit staff during the outbreak of COVID-19. *Intensive and Critical Care Nursing*, 70, 1–8. <https://doi.org/10.1016/j.iccn.2022.103206>

- Rushton, C. H., Caldwell, M., & Kurtz, M. (2016). Moral distress: A catalyst in building moral resilience. *American Journal of Nursing*, 116(7), 40–49. <https://doi.org/doi: 10.1097/01.NAJ.0000484933.40476.5b>
- Sharma, M., Creutzfeldt, C. J., Lewis, A., Patel, P. V., Hartog, C., Jannotta, G. E., Blissitt, P., Kross, E. K., Kassebaum, N., Greer, D. M., Curtis, J. R., & Wahlster, S. (2021). Health-care professionals' perceptions of critical care resource availability and factors associated with mental well-being during coronavirus disease 2019 (COVID-19): Results from a US survey. *Clinical Infectious Diseases*, 72(10), e566–e576. <https://doi.org/10.1093/cid/ciaa1311>
- Sheppard, K. N., Runk, B. G., Maduro, R. S., Fancher, M., Mayo, A. N., Wilmoth, D. D., Morgan, M. K., & Zimbardo, K. S. (2022). Nursing moral distress and intent to leave employment during the COVID-19 pandemic. *Journal of Nursing Care Quality*, 37(1), 28–34. <https://doi.org/10.1097/NCQ.0000000000000596>
- Silverman, H., Wilson, T., Tisherman, S., Kheirbek, R., Mukherjee, T., Tabatabai, A., McQuillan, K., Hausladen, R., Davis-Gilbert, M., Cho, E., Bouchard, K., Dove, S., Landon, J., & Zimmer, M. (2022). Ethical decision-making climate, moral distress, and intention to leave among ICU professionals in a tertiary academic hospital center. *BMC Medical Ethics*, 23(45), 1–15. <https://doi.org/10.1186/s12910-022-00775-y>
- Simonovich, S. D., Webber-Ritchey, K. J., Spurlark, R. S., Florczak, K., Mueller Wiesemann, L., Ponder, T. N., Reid, M., Shino, D., Stevens, B. R., Aquino, E., Badowski, D., Lattner, C., Soco, C., Krawczyk, S., & Amer, K. (2022). Moral distress experienced by US nurses on the frontlines during the COVID-19 pandemic: Implications for nursing policy and practice. *SAGE Open Nursing*, 8, 1–12. <https://doi.org/10.1177/23779608221091059>
- Sirilla, J., Thompson, K., Yamokoski, T., Risser, M. D., & Chipps, E. (2017). Moral distress in nurses providing direct patient care at an academic medical center. *Worldviews on Evidence-Based Nursing*, 14(2), 128–135. <https://doi.org/10.1111/wvn.12213>
- Thorne, S. (2014). Applied interpretive approaches. In *The Oxford Handbook of Qualitative Research* (pp. 99–115). <https://academic.oup.com/edited-volume/38166/chapter-abstract/332998582?redirectedFrom=fulltext>
- Thorne, S. (2016). *Interpretive description*. Routledge.
- Thorne, S., Knoch, L., Brown, H., & Albersheim, S. (2018). Navigating the dangerous terrain of moral distress: Understanding response patterns in the NICU. *Qualitative Health Research*, 28(5), 683–701. <https://doi.org/10.1177/1049732317753585>
- Trachtenberg, S., Teahan, T., Shostak, S., Snyderman, C., Lewis, M., Romain, F., Cadge, W., McAuley, M. E., Matthews, C., Lux, L., Kacmarek, R., Grone, K., Donahue, V., Bandini, J., & Robinson, E. (2023). Experiences of moral distress in a COVID-19 intensive care unit: A qualitative study of nurses and respiratory therapists in the United States. *Nursing Inquiry*, 30(1), 1–13. <https://doi.org/10.1111/nin.12500>
- Ulrich, C. M., & Grady, C. (2017). Professional practice issues in critical care. In *Critical care nursing: A holistic approach* (10th ed., pp. 79–97). Walters Kluwer.
- Vranas, K. C., Golden, S. E., Mathews, K. S., Schutz, A., Valley, T. S., Duggal, A., Seitz, K. P., Chang, S. Y., Nugent, S., Slatore, C. G., Sullivan, D. R., & Hough, C. L. (2021). The influence of the COVID-19 pandemic on ICU organization, care processes, and frontline clinician experiences: A qualitative study. *Chest*, 160(5), 1714–1728. <https://doi.org/10.1016/j.chest.2021.05.041>
- Wahlster, S., Sharma, M., Lewis, A. K., Patel, P. V., Hartog, C. S., Jannotta, G., Blissitt, P., Kross, E. K., Kassebaum, N. J., Greer, D. M., Curtis, J. R., & Creutzfeldt, C. J. (2021). The coronavirus disease 2019 pandemic's effect on critical care resources and health-care providers: A global survey. *Chest*, 159(2), 619–633. <https://doi.org/10.1016/j.chest.2020.09.070>
- Wilson, M. A. (2017). Analysis and evaluation of the moral distress theory. *Nursing Forum*, 53(2), 259–266. <https://doi.org/10.1111/nuf.12241>

Precepting in the ICU: Supporting Critical Thinking in Critical Care

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Abstract

It is generally accepted that the high-stakes reality in which critical care nursing takes place requires excellent clinical judgement. But what does that really mean in practice? Clinical judgement and clinical reasoning are fundamental concepts in nursing practice and education, but what they are and what they look like in practice is not always easy to describe. They can also be challenging for preceptors to teach and foster. In this article, we define and describe clinical reasoning and clinical judgement as part of a critical care nurse's clinical competence, explore some underlying

thinking processes, and provide practical strategies for critical care preceptors to help new critical care nurses develop these crucial abilities. This article is the fourth in a series that aims to support new and experienced critical care nurse preceptors as they guide those who will be the future of critical care nursing.

Keywords: clinical education, precepting, teaching and learning, clinical reasoning, clinical judgement

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Many terms are used to describe how nurses think in clinical practice: clinical reasoning, clinical judgement, clinical decision-making, and critical thinking are often used interchangeably and in various combinations, and the exact definitions of these concepts are sometimes debated in nursing literature (Caputi, 2023). While acknowledging this reality, here *clinical judgement* refers to the outcome of a nurse's thought process, such as an assessment or conclusion about a patient's status or needs, or a clinical decision and choice of intervention (Tanner, 2006). For example, a critical care nurse may conclude that a patient has a mucus plug and decides to suction. Both the conclusion and the decision to intervene are clinical judgements. *Clinical reasoning* is the nurse's thought process that leads to a clinical judgement (Tanner, 2006). In the previous example, a critical care nurse may have observed a reduction in the patient's oxygen saturation, an increase in peak airway pressures, and auscultated coarse crackles. After gathering this data, the judgements that the patient has a mucus plug and needs suctioning are formed through a series of thinking processes, each depending on the critical care nurse's knowledge, expertise, and experience level.

Thinking Processes

Thinking processes are different from foundational knowledge, such as that learned in theory classes. *Critical thinking* in clinical decision-making includes identifying and challenging beliefs, values, and assumptions at play, considering the context of the situation, and imagining possibilities (Brookfield, 1987). *Systematic thinking* involves collecting and organizing information in methodical ways, while *anticipatory thinking* is part of "planning ahead". Finally, *creative thinking* acknowledges the reality of critical care nursing today: the increasing acuity and complexity of patients, their individuality, and scarcity of resources, including staff (Gillespie & Paterson, 2009). Experience and reflection are also crucial to learning and the development of clinical reasoning. This process occurs in a "reflective learning cycle" where a nurse has a practical

experience in the clinical setting, reflects on it with or without their preceptor or instructor, then considers what they may have learned in planning for the next experience (Bott et al., 2011; Barnard, 1987; Kolb, 1984). So how does a preceptor support these thinking and reflective processes?

Practical Strategies

There are numerous strategies preceptors can utilize to support nurses new to critical care to develop clinical reasoning and judgement. The level and choice of strategy will change based on the preceptee's learning needs and preceptor's teaching experience. Additionally, the success of these strategies depends on an effective learning-teaching relationship between the preceptor and the new critical care nurse (Jetha & House-Kokan, 2024; Lazarus, 2016). Strategies include but are not limited to case presentations, clinical discussions with Socratic questioning, think aloud methods, coaching, and reflection. Several teaching models have also been developed across healthcare settings including the Five-Minute Preceptor (5MP; Bott et al., 2011). While it is outside the scope of this article to discuss all teaching-learning strategies, those relevant to clinical reasoning and judgement are highlighted.

Many preceptors are familiar with the use of **case presentations** in clinical education. In this teaching strategy, the new critical care nurse uses a structured approach to present their assigned patient's case, demonstrating their ability to organize and prioritize pertinent patient history, diagnosis, assessments, and care. Case presentations reveal the preceptee's overall understanding of the patient situation as well as identify knowledge gaps (Lazarus, 2016). In the **"Think aloud"** method, the preceptee voices their thoughts out loud as they receive, organize, and prioritize patient data and nursing care. This may be random and disorganized at first, but then becomes more distilled as the new critical care nurse makes links with their existing knowledge. For example, the critical care preceptee caring for a ventilated patient with pneumonia may verbalize

that they have observed reduced oxygen saturation as well as increased peak airway pressures, and state the next step is to auscultate the lungs and assess airflow. The preceptee then may connect their findings with existing knowledge that this could be due to mucus accumulation. This strategy is versatile and can be utilized after handover report, after initial and ongoing assessments, and at any time the patient situation changes. In addition, the preceptor can “think aloud” themselves as they assess patients and make clinical decisions, role modelling their own clinical reasoning processes.

Clinical discussion is another strategy to develop clinical reasoning. There are several methods to help preceptors structure the discussion including the 5MP (Bott et al., 2011), which is a five-step model based on experiential learning theory. Preceptors may also use Socratic questioning in clinical discussion as a technique to develop clinical reasoning. **Socratic questions** deeply probe learners’ thinking to help them reason through the nuances and ambiguities of each patient situation (Makhene, 2019). There are several types of Socratic questions. *Clarification questions* are a good place to start: Tell me about your patient... what do you believe is their primary problem, and what is the best way to address it? *Questioning reasons* explores the assumptions the preceptee is making in their thinking. For example, the preceptor may ask “How do you know that?”; “On what patient data are you basing your thinking?”; or “Tell me why.” Questions that *explore alternatives* are another type of question that encourages the preceptee to think beyond the immediate, such as “What are other possibilities here?”; “What alternatives are there?”; “Tell me about different interventions that might be possible and why

they would be appropriate.” Finally, *questions on consequences* support the preceptee to think about the implications of a clinical decision: “What are the consequences of each of these possible approaches? What would you do in this situation and why?” or “If this occurs, what would you expect to happen next? Why?” Similarly, *What if* questions (Benner et al. 2010) are another strategy that allow the preceptor to alter a hypothetical patient situation to facilitate the nurse’s thinking beyond the current circumstance to assess for depth and flexibility in thinking. *What if* questions can be used when there is downtime or other opportunity in the clinical setting to create teaching moments (Nelson & Joswiak, 2020). To build on the earlier example of a ventilated patient with pneumonia, the preceptor could ask, “What if the patient’s pH dropped and so did their blood pressure?”

These models and strategies work in concert with **reflection**, particularly reflection on action, or looking back at a situation/action and deliberately thinking about it (Schön, 1983). By purposefully reflecting, the preceptee can make meaningful connections to their existing knowledge and further their clinical reasoning. Additionally, coaching techniques of **listening and guiding** interconnect with all these strategies to create an effective teaching-learning relationship.

Step In, Step Back, Step Out: Progression of Learning

Supporting nurses to transition from novice level to independence in critical care is a primary role for preceptors. How do preceptors implement this in practice? Scaffolding is a teaching method that utilizes role modelling, prompting, and

Figure 1

Clinical Discussion and Socratic Questions

Type of Question	Examples
Clarification Questions	Tell me about your patient...what do you believe is their primary problem, and what is the best way to address it?
Questioning Reasons and Assumptions	- How do you know that? - On what patient data are you basing your thinking? - Tell me why?
Exploring Alternatives	- What are other possibilities here? - What alternatives are there? - Tell me about different interventions that might be possible and why they would be appropriate.
Questions on Consequences	- What are the consequences of each of these possible approaches? - What would you do in this situation and why - If this occurs, what would you expect to happen next? Why?
Questions to ‘Think Beyond’ Reflection	- What if....? - What do you think went well? Why? - What do you think you would do differently next time? Why? - Is there anything else you would like to consider? - What is your key takeaway from this experience?

coaching to facilitate this transition over time (Stănesu-Yadav & Lillekroken, 2023). Preceptors can think of this progression as Step In, Step Back, and Step Out. **Step In** involves the nurse working together with the preceptor to complete assessments, tasks, and care, with both using the ‘think aloud’ method to share their clinical reasoning. This stage also serves to acclimatize the new critical care nurse to the unit and socialize into the team. In the **Step Back** stage, the preceptor steps away from direct patient care but remains in the patient room. This supports the new critical care nurse to begin to organize, prioritize and make clinical decisions, still using the “think aloud” strategy and clinical discussions to highlight their thinking and rationale for their decision-making. This stage helps the preceptee increase both competence and confidence, and allows the preceptor to assess their strengths and areas of focus. In this stage, the preceptor further socializes the nurse with the team by redirecting other health care team members, patients, and family to communicate and collaborate primarily with the preceptee. In the **Step Out** stage, the preceptee takes on more of the primary nurse role. The preceptor physically steps out of the room for brief time periods, initially 10–30 minutes, progressing to an hour at a time. This scaffold allows for gradual increased responsibility on the preceptee. The preceptor checks in, but the frequency is based on the patient’s acuity and preceptee’s progress. This stage often reveals gaps, if present, in various domains including knowledge, skill, clinical reasoning and judgement, and communication. While this step can be challenging for the preceptee and is often unsettling for the preceptor, it is crucial to provide the nurse new to critical care with opportunities to develop their knowledge and clinical reasoning. The final stage is independence. By this point, the preceptee can consistently take on the novice critical care nursing role without prompting or guidance in caring for patients who are relatively stable, or have single-system dysfunction. However, if the preceptee encounters a new situation or more complex or unstable patient, the preceptor shifts back to the Step In stage, assisting the preceptee to progress forward again. When to progress from one stage to the next is individualized based on the preceptee.

Conclusion

Critical care is a high-stakes clinical specialty where excellent clinical reasoning skills and clinical judgement are imperative for safe, ethical patient care. Assisting new critical care nurses to develop clinical reasoning and judgement in this specialty area is a crucial part of the preceptor’s role, although this is not always easy to do in practice. By utilizing teaching-learning strategies designed to facilitate and progress the ongoing development of clinical reasoning skills, preceptors assist new critical care nurses to expand both their competence and confidence, and promote their success.

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REFERENCES

- Barnard, P. B. (1987). Towards an epistemological basis for experiential learning in nurse education. *Journal of Advanced Nursing*, 12(2), 189–193. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1365-2648.1987.tb01320.x>
- Benner, P., Sutphen, M., Leonard, V., & Day, L. (2010). *Educating nurses: A call for radical transformation*. San Francisco, CA: Jossey-Bass.
- Bott, G., Mohide, E. A., & Lawlor, Y. (2011). A clinical teaching technique for nurse preceptors: The five minute preceptor. *Journal of Professional Nursing*, 27(1), 35–42. <https://doi.org/10.1016/j.profnurs.2010.09.009>
- Brookfield, S. D. (1987). *Developing critical thinkers: Challenging adults to explore alternative ways of thinking and acting*. Jossey-Bass.
- Caputi, L. (2023). *Dr. Caputi’s principles for nurse educators: A guide for teaching nursing*. Windy City Publishers.
- Gillespie, M., & Paterson, B. L. (2009). Helping novice nurses make effective clinical decisions: The Situated Clinical Decision-Making Framework. *Nursing Education Perspectives*, 30(3), 164–170. <https://journals.lww.com/neponline/fulltext/2009/05000>
- Jetha, F., & House-Kokan, M. (2024). The preceptor-learner relationship: The heart of precepting in critical care. *Canadian Journal of Critical Care Nursing*, 35(1), 9–10. <https://doi.org/10.5737/23688653-3519>
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development* (Vol. 1). Prentice-Hall.
- Lazarus, J. (2016). Precepting 101: Teaching strategies and tips for success for preceptors. *Journal of Midwifery & Women’s Health*, 61(1), S11–S21. <https://doi.org/10.1111/jmwh.12520>
- Makhene, A. (2019). The use of the Socratic inquiry to facilitate critical thinking in nursing education. *Health SA = SA Gesondheid, Journal of Interdisciplinary Health Sciences*, 24, 1224. <https://doi.org/10.4102/hsag.v24i0.1224>
- Neher, J. O., Gordon, K. C., Meyer, B. & Stevens, N. (1992). A five-step “microskills” model of clinical teaching. *The Journal of the American Board of Family Medicine*, 5(4), 419–424. <https://doi.org/10.3122/jabfm.5.4.419>
- Nelson, D. M. & Joswiak, M. E. (2020). Preceptor teaching tools to support consistency while training novice nurses. *Journal for Nurses in Professional Development*, 36(5), 307–312. <https://doi.org/10.1097/NND.0000000000000672>
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. Basic Books, Inc.
- Stănesu-Yadav, D.-M., & Lillekroken, D. (2023). Nurse preceptors’ experiences of promoting and teaching fundamental care to undergraduate nursing students: A qualitative study. *Journal of Advanced Nursing*, 79, 1094–1106. <https://doi.org/10.1111/jan.15372>
- Tanner, C. (2006). Thinking like a nurse: A research-based model of clinical judgment in nursing. *Journal of Nursing Education*, 45(6), 204–212. <https://pubmed.ncbi.nlm.nih.gov/16780008/>

A Reflection on the Mentorship Journey

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My journey as a mentor in the Intensive Care Unit (ICU) has been a profound source of personal growth and fulfillment, a testament to the impact of effective mentorship. Prior to assuming the mentor role, I was working as a clinical facilitator for registered nurses (RNs) in their journey to become critical care nurses, striving to advance their careers in the ICU. The diverse group of nurses I worked with include Internationally Educated Nurses (IENs) from various backgrounds, nurses with varying years of experience across different nursing units, and Newly Graduated Nurses (NGNs), each of which present unique and exciting challenges. Driven by my passion for teaching and drawing from my prior experience in adult education, I eagerly embraced the role of a mentor within our unit. However, it was only after stepping into this role that I truly understood its profound impact. Beyond simply providing instruction and continuous coaching, I discovered that being a mentor involves making significant contributions to both professional and personal development; a deeply rewarding realization.

In clinical facilitation, my initial emphasis was ensuring novice critical care nurses met the expected outcomes within the college-defined time-frame for completing a critical care nursing certificate. However, a transformative insight emerged for me when I encountered the perspective that directly targeting outcomes is futile (Steinmann et al., 2019). This insight has reshaped my approach to mentorship. Instead of fixating on the result, effective mentorship should focus on the process, with the outcome naturally following. Reflecting on my experience as a mentor for a year, I have extracted vital learnings: first, motivating people incorporates multiple factors, including a sense of belonging where relationship is key; second, nurses feel empowered if they are engaged in an experience that is applicable in their day-to-day skills; and third, constructive feedback plays a pivotal role in fostering professional and personal growth.

Motivation Is the Outcome of A Multi-Factorial Process

Engaging with diverse learners throughout the year and having lived experience as an IEN, I have realized that developing a sense of belonging is a key motivator in learning. So, understanding that learners (mentees) are more than their current role and validating their lived experiences, foster trust development and help create a closer connection with them. I agree with Fowler (2023) that human connection, a sense of belonging, and meaningful interactions are psychological drivers. My mentorship revolves around these concepts. I intend to collaborate with colleagues to establish a warm climate where new nurses feel valued, respected, and interconnected, unlocking their full potential.

Relationship Is the Key

Upon reflection, I have realized that sharing my vulnerability as an NGN entering the ICU environment, and also as an IEN in Canadian culture, has a profound impact on fostering relationships with mentees. I found that a willingness to be vulnerable instills hope and possibility among nurses new to the ICU. An element of leadership is about optimizing teamwork and relationships underpin all collaborative activities (Nicholson & Kurucz, 2019). Mentorship involves leadership. The relational approach appeals to me as I work with new nurses who face challenges adapting to the fast-paced ICU environment and culture. I focus on building trust and respect with integrity, accessibility, and availability for the mentees.

Empowering Through Opportunities on Hands-on Experiences

Active learning through real-world experience and engagement has been vital in supporting learners in adapting to the fast-paced ICU setting. I have learned that an effective mentor centres empowerment, where individuals are motivated to acquire expertise, grow, and achieve a sense of accomplishment (López-Medina et al., 2021). I concur with Carleton et al. (2018) that leaders should create opportunities for skill enhancement, feedback, and recognition. These elements of effective mentorship support individuals when building confidence and competence during the delivery of care to patients and their families, fostering evidence-based practice and allowing for any topics raised by the mentees to be addressed. I am committed to applying transformational learning methods. These include creating a supportive and engaging learning environment through hands-on participation at the bedside, as well as one-on-one interviews with the given patient assignment as an unfolding case study. My intent with these methods are to elevate learners' knowledge, skill, and clinical judgment to meet the practice standards for critical care nursing set by the Critical Care Services Ontario (2018). This commitment, above all, aims to ensure patient-centred care is delivered and supported through evidence-based practice; a cornerstone of the nursing profession.

Continuous Feedback

As a clinical facilitator, I have provided feedback as part of evaluations that adhere to academic expectations. However, as a mentor, I recognize the importance of factual, constructive feedback for personal development. Developing clinical anticipation and judgment skills is necessary to deliver safe patient care. Therefore, instilling curiosity for learning and recommending mentees to question “why” while utilizing “what-if” questions help guide decision-making as the patient's conditions unfold. My approach aims to shift from control-oriented practices to supportive methods.

Developmental and Strengthening Needs of Mentors

It has been a year since I assumed the mentor role, adding an extra vital responsibility to my previous role as a clinical facilitator. This journey has been a continuous learning process and I actively have sought to develop self-reflection practices and gather feedback from the mentees, my fellow mentors, and immediate managers to assist in shaping my mentorship and leadership methods. I am committed to applying self-reflection and the feedback of others, as it is critical to my continued growth as a mentor. In retrospect, additional professional training in coaching and mentoring before stepping into this role would have been beneficial to lay the foundation for effective mentorship strategies at the onset of the role.

Article Notes

Parwati Pandey is an invited author. This article has not been peer-reviewed.

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REFERENCES

- Carleton, E. L., Barling, J., & Trivisonno, M. (2018). Leaders' trait mindfulness and transformational leadership: The mediating roles of leaders' positive affect and leadership self-efficacy. *Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences Du Comportement*, 50(3), 185–194. <https://doi.org/10.1037/cbs0000103>
- Critical Care Services Ontario. (2018). *Practice standards for critical care nursing in Ontario*. <https://criticalcareontario.ca/wp-content/uploads/2020/10/2018-Practice-Standards-for-Critical-Care-Nursing-in-Ontario-English-Final.pdf>
- Fowler, S. (2023). *Why motivating people doesn't work...and what does, second edition: More breakthroughs for leading, energizing, and engaging*. Berrett-Koehler Publishers.
- López-Medina, I. M., Sánchez-García, I., García-Fernández, F. P., & Pancorbo-Hidalgo, P. L. (2021). Nurses and ward managers' perceptions of leadership in the evidence-based practice: A qualitative study. *Journal of Nursing Management*, 30(1). <https://doi.org/10.1111/jonm.13469>
- Nicholson, J., & Kurucz, E. (2019). Relational leadership for sustainability: Building an ethical framework from the moral theory of "ethics of care." *Journal of Business Ethics*, 156(1). <https://doi.org/10.1007/s10551-017-3593-4>
- Steinmann, B., Klug, H. J. P., & Maier, G. W. (2019). The path is the goal: How transformational leaders enhance followers' job attitudes and proactive behavior. *Frontiers in Psychology*, 9(2338). <https://doi.org/10.3389/fpsyg.2018.02338>

Hyponatremia: The Role of Intravenous Fluids

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Harber, M., Tscheng, D., & Riley, L. (2024). Medication safety practice corner: Hyponatremia: The role of intravenous fluids. *The Canadian Journal of Critical Care Nursing*, 35(1), 38–40. DOI: 10.5737/23688653-35238



Report a med error

In this regular column, ISMP Canada will feature a critical care-related medication story and share practical learning for critical care nurses.

Hyponatremia is the most common electrolyte disorder in critically ill patients and is associated with prolonged hospital stays as well as an increased risk of morbidity and mortality (Rondon-Berrios, 2023). Trauma, surgery, and medications, including intravenous (IV) fluids, can contribute to the development of hyponatremia (Friedman & Cirulli, 2013). Understanding the risks associated with IV fluids and early recognition of the symptoms of hyponatremia are paramount for patient safety.

Incident Example

Normal saline (0.9% sodium chloride) with potassium chloride (KCl) 20 mEq/L was ordered for a child in a pediatric intensive care unit. An IV bag of dextrose 3.3% and sodium chloride 0.3% (2/3 and 1/3) with KCl 20 mEq/L was inadvertently selected in error; the volume of fluid infused was not included in the error report. The physician was notified of the error, blood work was ordered, and the patient was monitored for clinical signs and symptoms of hyponatremia.

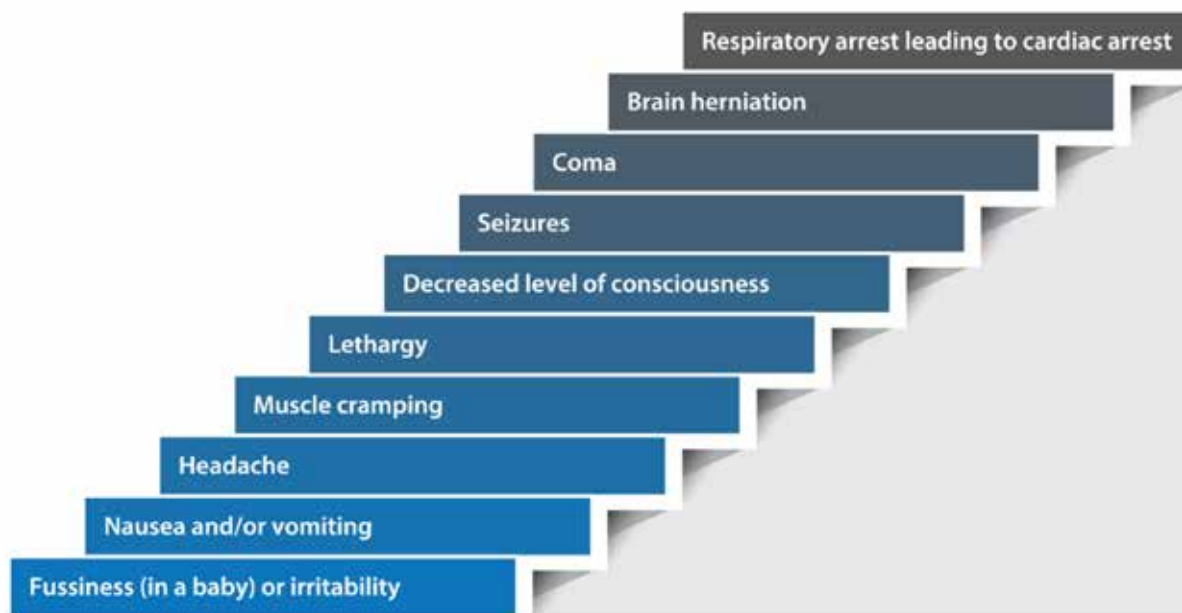
Background

Acute hyponatremia, defined as serum sodium less than 130 mmol/L that develops in less than 48 hours, must be recognized and treated promptly to avoid fatal clinical deterioration (ISMP Canada, 2024). If left untreated, low serum sodium results in cerebral edema and other severe neurological complications (Figure 1). Pediatric patients are particularly sensitive to these effects due to a higher brain–intracranial volume ratio, and they are at greater risk of neurological compromise if serum sodium levels drop below 130 mmol/L (Friedman & Canadian Paediatric Society, Acute Care Committee, 2024).

It is essential to recognize that a fluid's tonicity can change once the fluid has been infused (Manderville et al., 2023). For example, dextrose is metabolized by the body upon infusion, leaving free water, which is hypotonic (Table 1).

Figure 1

Symptomatic Progression of Untreated Acute Hyponatremia



Note. (ISMP Canada, 2024; Seay et al., 2020)

To understand the effects of IV fluids on sodium levels, it is important to consider the tonicity of the infused fluid. Tonicity is a characteristic of IV fluids that depends on the number and types of constituents (e.g., sodium, glucose). It refers to the capability of a solution to shift water into or out of a cell, causing the cell to swell or shrink (ISMP Canada, 2024). A hypotonic fluid has a lower concentration of constituents than blood serum; infusion of such a fluid reduces serum sodium levels and can cause water to move from the blood serum into the cells, which leads to cell swelling (Ogata et al., 2022). Low sodium levels in the blood, known as hyponatremia, and the consequent movement of water into the cells, leads to the clinical effects listed in Figure 1.

Discussion

A recent analysis of reports related to hospital-acquired hyponatremia submitted to the Canadian Medication Incident Reporting and Prevention System (ISMP Canada, 2024) found that the majority of incidents involved the inadvertent selection and administration of a hypotonic fluid instead of an intended isotonic fluid.

In the incident described above, a fluid selection error resulted in an administration error. Contributing factors included the presence of an IV solution (2/3 and 1/3 with KCl 20 mEq/L) that normally would not be available in the pediatric ICU and the storage of this incorrect IV solution in a bin labelled for the intended product (NS with KCl 20 mEq/L). As a result, a hypotonic fluid was selected and administered, putting the patient at risk of hyponatremia.

It is important to note that, in addition to problems that occur with the selection of the incorrect fluid, a correctly selected fluid, accurately administered, may also cause hyponatremia, depending on the clinical circumstances. A full appreciation

and assessment of the patient's clinical condition and monitoring of appropriate physical and laboratory parameters are critical to prevent harm.

Key Practice Tips for Critical Care Nurses

- Integrate an assessment for the signs and symptoms of acute hyponatremia into patient assessment protocols.
- Monitor vital signs, laboratory results, and volume status to prevent acute hyponatremia (ISMP Canada, 2024).
- Review the appropriateness of IV fluid orders in relation to the patient's clinical condition, age, and weight (especially in the pediatric population; ISMP Canada, 2024).
 - Consider the indication for the IV fluid selected.
 - Consider the volume of IV fluid to be administered when medications are given in a hypotonic solution. **Some medication incident reports describing patient harm and death have identified worsening hyponatremia when large volumes of hypotonic IV solutions were used to administer certain medications** (ISMP Canada, 2009, 2023).
 - Recognize that rapid overcorrection of sodium levels can lead to harm (MacMillan et al., 2023).
- Encourage family and care partners to share any concerns regarding a change in the status of the patient. Subtle changes in a patient's demeanour or condition may be more readily identified by family members than by healthcare providers (ISMP Canada, 2024).
- Immediately report critical laboratory results and signs and symptoms possibly related to hyponatremia (Figure 1) to the most responsible physician, in accordance with organizational policy (ISMP Canada, 2024).
- Consider IV fluids as a contributing factor to hyponatremia, whether given as ordered or when administered in error.

Table 1

Examples of Intravenous Fluid Therapies that May Contribute to Hyponatremia

Fluid (Colloquial Names)	Sodium Content (mmol/L)	Tonicity
Ringer's lactate (lactated Ringer's, LR, RL)	130	• Often described as <i>isotonic</i> because it contains other constituents (potassium, calcium, lactate); described in some references as <i>slightly hypotonic</i> (Feld et al., 2018) • May cause or worsen hyponatremia because its sodium content is lower than normal serum sodium level
Sodium chloride 0.45% (½ NS)	77	• <i>Hypotonic; may cause hyponatremia</i>
Dextrose 5% and sodium chloride 0.45% (D5W ½ NS)	77	
Dextrose 3.3% and sodium chloride 0.3% (2/3 and 1/3)	51	
Dextrose 5% in water (D5W)	0	• <i>Very hypotonic after infusion because the glucose is metabolized; may cause hyponatremia</i>

Note. (ISMP Canada, 2024).

Conclusion

Reducing the risk of harm from hyponatremia, whether present on admission to a critical care setting or developing during a patient's stay, requires vigilance by the patient's critical care team and family members. Critical care nurses, along with family and care partners, hold the key to recognizing subtle changes in a patient's condition. The selection of IV fluids, ongoing monitoring of serum sodium levels, and recognition of the signs and symptoms of acute hyponatremia are essential to keeping patients safe.

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REFERENCES

- Feld, L. G., Neuspiel, D. R., Foster, B. A., Leu, M. G., Garber, M. D., Austin, K., Basu, R. K., Conway, E. E., Jr., Fehr, J. J., Hawkins, C., Kaplan, R. L., Rowe, E. V., Waseem, M., Moritz, M. L., & Subcommittee on Fluid and Electrolyte Therapy. (2018). Clinical practice guideline: maintenance intravenous fluids in children. *Pediatrics*, 142(6), e20183083. http://publications.aap.org/pediatrics/article-pdf/142/6/e20183083/1076087/peds_20183083.pdf
- Friedman, J. N., & Canadian Paediatric Society, Acute Care Committee. (2024). *Risk of acute hyponatremia in hospitalized children and youth receiving maintenance IV fluids*. Canadian Paediatric Society. <https://cps.ca/en/documents/position/acute-hyponatremia-in-hospitalized-children-and-youth>
- Friedman, B., & Cirulli, J. (2013). Hyponatremia in critical care patients: Frequency, outcome, characteristics, and treatment with the vasopressin V2-receptor antagonist tolvaptan. *Journal of Critical Care*, 28(2), 219.e1–12.
- ISMP Canada. (2009). Hospital-acquired acute hyponatremia: Two reports of pediatric deaths. *ISMP Canada Safety Bulletin*, 9(7), 1–4. <https://ismpcanada.ca/wp-content/uploads/ISMPCSB2009-7-HospitalAcquiredAcuteHyponatremia.pdf>
- ISMP Canada. (2023). When the antidote causes harm: Preventing errors with intravenous acetylcysteine. *ISMP Canada Safety Bulletin*, 23(7), 1–12. <https://ismpcanada.ca/wp-content/uploads/ISMPCSB2023-i7-Acetylcysteine.pdf>
- ISMP Canada. (2024). Reducing the risk of hospital-acquired hyponatremia: Intravenous fluid management and monitoring. *ISMP Canada Safety Bulletin*, 24(6), 1–6. <https://ismpcanada.ca/bulletin/reducing-the-risk-of-hospital-acquired-hyponatremia-intravenous-fluid-management-and-monitoring/>
- MacMillan, T. E., Shin, S., Topf, J., Kwan, J. L., Weinerman, A., Tang, T., Raissi, A., Koppula, R., Razak, F., Verma, A. A., & Fralick, M. (2023). Osmotic demyelination syndrome in patients hospitalized with hyponatremia. *NEJM Evidence*, 2(4). <https://evidence.nejm.org/doi/full/10.1056/EVIDoa2200215>
- Manderville, J. R., More, K. M., & Tennankore, K. (2023). Misunderstandings about tonicity and osmolality can lead to patient harm. *Canadian Journal of Hospital Pharmacy*, 76(4), 324–326. <https://www.cjhp-online.ca/index.php/cjhp/article/view/3417>
- Ogata, M., Morikubo, S., Imai, N., Shibagaki, Y., & Yazawa, M. (2022). Tonicity matters, especially in complex hyponatremia resulting from pseudo-, trans-locational, and true hypotonic hyponatremia: An educational case report. *Internal Medicine*, 61(10), 1567–1571. https://www.jstage.jst.go.jp/article/internal-medicine/61/10/61_8285-21/_article
- Rondon-Berrios, H. (2023). Diagnostic and therapeutic strategies to severe hyponatremia in the intensive care unit. *Journal of Intensive Care Medicine*, 39(11), 1039–1054. <https://journals.sagepub.com/doi/10.1177/08850666231207334>
- Seay, N.W., Lehigh, R.W., & Greenberg, A. (2020). Diagnosis and management of disorders of body tonicity-hyponatremia and hypernatremia: Core curriculum 2020. *American Journal of Kidney Disease*, 75(2), 272–286. [https://www.ajkd.org/article/S0272-6386\(19\)30943-6/fulltext](https://www.ajkd.org/article/S0272-6386(19)30943-6/fulltext)