



Respiratory complications associated with critical patient care management: perceptions of nurses

Complicaciones respiratorias asociadas a la gestión del cuidado del paciente crítico: percepción de enfermería

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ABSTRACT:

Introduction: respiratory complications in critically ill patients, often underestimated or overlooked, pose invisible challenges for nursing staff in the face of the organizational hegemony of hospital services, directly affecting care management, the quality of healthcare, and the determination of health and disease status.

Objective: explore nursing perceptions regarding respiratory complications associated with critical patient care management.

Material and methods: phenomenological-descriptive qualitative study based on Husserl, with a sample of 10 adult ICU nurses from Ecuadorian public hospitals, selected through purposive sampling. Semi-structured virtual interviews were conducted until theoretical saturation was reached; they were transcribed and analyzed using the Colaizzi method with the support of ATLAS.ti.

Results: five categories emerged: 1. Risk factors for respiratory complications; 2. Clinical and institutional environment conditions; 3. Emotional experiences and subjective burden of nursing staff; 4. Nursing knowledge and professional skills; and 5. Clinical practices and care management strategies.

Conclusions: from a nursing perspective, there is evidence of a complex reality where technical, emotional, and organizational demands converge with regard to the management of respiratory care in critically ill patients. Therefore, strengthening continuing education, improving institutional conditions, and promoting collaboration among professionals are keys to ensuring quality care.

Keywords: Respiration Disorders; Nursing Care; Critical Care; Attitude of Health Personnel.

RESUMEN:

Introducción: las complicaciones respiratorias en pacientes críticos, frecuentemente infravaloradas o desconsideradas, se configuran como desafíos del personal de enfermería invisibles ante la hegemonía organizacional de los servicios hospitalarios, afectando directamente a la gestión del cuidado, la calidad de la atención sanitaria y la determinación del estado de salud-enfermedad. **Objetivo:** explorar la percepción de enfermería sobre las complicaciones respiratorias asociadas a la gestión del cuidado del paciente crítico.

Material y métodos: estudio cualitativo descriptivo fenomenológico basado en Husserl con muestra de 10 enfermeras de UCI adulta en hospitales públicos ecuatorianos, seleccionadas por muestreo intencional. Se realizaron entrevistas semiestructuradas virtuales hasta saturación teórica; transcritas y analizadas mediante el método de Colaizzi con soporte de ATLAS.ti.

Resultados: emergieron 5 categorías: 1. Factores de riesgo para complicaciones respiratorias; 2. Condiciones del entorno clínico e institucional; 3. Vivencias emocionales y carga subjetiva del personal de enfermería; 4. Saberes y competencias profesionales de enfermería; y 5. Prácticas clínicas y estrategias de gestión del cuidado.

Conclusiones: desde la percepción de enfermería, se evidencia una realidad compleja donde convergen exigencias técnicas, emocionales y organizacionales respecto a la gestión de cuidados respiratorios en pacientes críticos; por lo que fortalecer la formación continua, mejorar las condiciones institucionales y promover la colaboración entre profesionales resulta clave para asegurar cuidados de calidad.

Palabras clave: Trastornos Respiratorios; Atención de Enfermería; Cuidados Críticos, Actitud del Personal de Salud.

INTRODUCTION

The care of patients is inherent to health personnel, whose advanced knowledge and practice make it possible to deliver comprehensive, specialized, and individualized care; thus, in intensive care units (ICUs), nursing work centers on assessing, gathering information, interpreting, and carrying out procedures and care, and subsequently evaluating them⁽¹⁾. For this reason, it is essential to carry out this process with attention to both objective and subjective data, such as the health professional's perception of the complications these patients present, which are frequently underestimated or overlooked.

A critically ill patient is understood as a person who presents dysfunction of one or more vital organs, with an imminent risk of severe deterioration or death, and whose condition may be reversible if timely and appropriate care is provided⁽²⁾. Within this framework, complications of the respiratory system, including conditions that require ventilatory support, represent a significant clinical challenge because of their complexity, the need for continuous monitoring, and the demand for interventions from the healthcare team, particularly nursing.

International studies have described that critically ill patients with respiratory compromise constitute one of the groups that generate the greatest care demand in intensive care units, owing to the need for continuous monitoring, the use of ventilatory support, and the performance of complex clinical interventions. This situation is associated with prolonged hospital stays, greater resource use, and increased complexity of clinical care, which affects both patient outcomes and the workload of nursing staff⁽³⁻⁵⁾.

In addition, the evidence indicates that respiratory complications do not depend solely on the patient's pathophysiological status, but also on organizational and contextual factors, such as the availability of supplies, staffing levels, interdisciplinary coordination, and the conditions of the hospital environment, all of which can affect both the timeliness and the quality of the care provided⁽⁶⁻⁸⁾.

In this regard, it is worth noting that nursing practice in the ICU takes place in settings of high technical and emotional demand, where clinical decisions, time management, and work overload shape experiences that affect patient safety and professional well-being^(9–11). This convergence of clinical, institutional, and human factors highlights the need to address the phenomenon from a comprehensive perspective that incorporates the lived experience of nursing staff.

In a study conducted in Bolivia, the authors described nursing care for intubated patients and identified the current state of care, on the basis of which they proposed a model aimed at preventing lower respiratory tract infections associated with mechanical ventilation⁽¹²⁾. Additionally, a literature review carried out in Chile on nursing care in critical care units revealed that care quality is influenced by external factors, such as workload, team communication, infrastructure, and safety culture, as well as by internal factors, including moral fatigue, psychological exhaustion, and the professional's work-related stress⁽¹³⁾. Taken together, these findings point toward understanding that the problem is not limited to the respiratory complication itself, but also involves the way care is organized, sustained, and delivered in settings of high clinical demand.

Moreover, in Ecuador, the studies conducted by Palacios et al. and Torres, which address the complications associated with airway management by nursing in critically ill patients with COVID-19 undergoing invasive mechanical ventilation, report that respiratory conditions are related to lung injury, pathological processes inherent to the disease, and aspects of equipment and ventilatory support management, in which the continuous clinical care provided by the nursing team proves decisive^(14,15).

Accordingly, the present study poses the following question: What challenges do nursing professionals face in critical care units when managing respiratory complications? The objective established for this study is to explore nursing perceptions of the respiratory complications associated with critical patient care management.

MATERIALS AND METHODS

The present study used a qualitative, descriptive, phenomenological approach. This methodology, grounded in the philosophy of Husserl⁽¹⁶⁾, seeks to understand the essence of the experiences shared by a group of people regarding a phenomenon; its aim is to capture how individuals perceive and make sense of their reality from their own subjectivity. This method grasps the essence of the phenomenon through the perceptions that participants attribute to it.

A semi-structured interview guide was used as the data collection instrument, developed from the study objective and the relevant literature. Before its application, the guide was reviewed by a panel of experts in critical care nursing and research in order to strengthen the relevance and clarity of the questions, as well as their coherence with the phenomenon of interest. A pilot test was then conducted with a group of 4 nurses who were not part of the final sample, which allowed the wording, sequence, and depth of the questions to be adjusted.

The population consisted of nursing professionals from second- and third-level public hospitals in Ecuador, selected through non-probabilistic purposive sampling, since the study required participants who met specific characteristics and had direct experience

with the phenomenon under analysis. Consequently, a sample of 10 registered nurses working in the adult ICU was obtained, all with at least 1 year of experience in the area, who wished to take part in the study and freely and voluntarily signed the informed consent form. Excluded, on the other hand, were professionals not belonging to the nursing team, technical and auxiliary personnel, nursing professionals with exclusively administrative duties, those who did not meet the experience criterion, and those who declined to participate.

For data collection, semi-structured interviews were conducted with nursing staff working in the ICU during July 2025. The interviews addressed the team's perceptions of respiratory complications, the challenges in care management, and the emotional and professional experiences associated with the phenomenon under study. They were carried out virtually through Microsoft Teams, with the prior authorization of the participants; the sessions were video-recorded and lasted approximately 30 minutes. The interviews were conducted until theoretical saturation of the analysis was reached, assessed through the progressive redundancy of the information, the consolidation of categories, and the interpretive stability of the emerging themes; in the final interviews, no substantively new contributions were identified, so the corpus was deemed sufficient to describe the phenomenon under study.

The interviews were then transcribed verbatim in Microsoft Word (Office 2016) using EMIC/ETIC language, and the analytic process followed Colaizzi's method, which makes it possible to understand the meaning of an experience from the participants' discourse. To this end, a complete reading of each transcript was first carried out to achieve an overall understanding of the content; next, significant statements related to the phenomenon were identified; meanings were then formulated from those statements; these were subsequently grouped into categories and subcategories representing common patterns and variations in the experiences; the categories were then validated with participants to ensure interpretive fidelity; and, finally, they were integrated into an essential description of the phenomenon^(17,18).

To facilitate the organization of the analysis, ATLAS.ti software was used as a supporting tool, together with color coding, which made it possible to trace statements, meanings, and emerging categories with full traceability between the original text and its interpretation, as well as to visualize thematic relationships. Confidentiality was ensured by assigning codes to the participants (E1-E10) and safeguarding the information in accordance with ethical criteria. Finally, the results were integrated into a structured description of the phenomenon, highlighting the central themes and the way they are expressed in critical care nursing practice.

RESULTS

The study sample consisted of ten nursing professionals, all women, ranging in age from 30 to 47 years, who hold third- and fourth-level education and work in the ICU of Ecuador's public sector; this reflects a homogeneous professional profile that provides context for the experiences and perceptions gathered in the study, **Table 1**.

Table 1. Sociodemographic data of the participants.

Participant	Sex	Age	Education level	Work area	Sector
E1	F	34	Postgraduate	Intensive care unit	Public
E2	F	38	Undergraduate	Intensive care unit	Public
E3	F	34	Postgraduate	Intensive care unit	Public
E4	F	30	Undergraduate	Intensive care unit	Public
E5	F	38	Postgraduate	Intensive care unit	Public
E6	F	31	Undergraduate	Intensive care unit	Public
E7	F	31	Undergraduate	Intensive care unit	Public
E8	F	37	Undergraduate	Intensive care unit	Public
E9	F	31	Undergraduate	Intensive care unit	Public
E10	F	47	Postgraduate	Intensive care unit	Public

Source: Prepared by the authors.

The study highlights the dialogues of the nurses who shared their day-to-day work experiences; on this basis, critical readings were carried out of all the information obtained from the interviews, along with the selection of excerpts, taking into account convergent and divergent elements and preserving EMIC language. The data were then coded, yielding 13 codes **Tables (2-3)**, with the texts organized and grouped according to units of meaning, which made it possible to extract the following categories: 1) Risk factors for respiratory complications; 2) Clinical and institutional environment conditions; 3) Emotional experiences and subjective burden of nursing staff; 4) Nursing knowledge and professional skills; 5) Clinical practices and care management strategies, **Figures (1-5)**.

Table 2. Analysis matrix: coding and meaning.

Code number	Coding	Meaning
C1	Yellow	Prior knowledge of respiratory complications.
C2	Orange	Importance of experience in the *ICU.
C3	Purple	Risk factors for respiratory complications.
C4	Blue	Challenges faced by health personnel.
C5	Gray	Continuing education.
C6	Green	Mitigation strategies: protocols and checklists.
C7	Red	Institutional resources and limitations.
C8	Magenta	Interdisciplinary collaboration.
C9	Dark green	Emotional impact and work-related stress.
C10	Pink	Self-directed learning and individual updating.
C11	Dark yellow	Specific role of nursing staff.
C12	Dark blue	Management of infections and bacterial resistance.
C13	Cyan	Use of records and logbooks.

Source: Prepared by the authors.

*Note: ICU: intensive care unit.

Table 3. Thematic analysis matrix: emerging categories and meanings constructed from the narratives.

Emergent categories	Participants	Units of meaning	Codes
Category 1: Factors associated with the risk of respiratory complications.	8	14	C3: Purple - Predisposition to complications.
Category 2: Conditions in the clinical and institutional environment.	10	9	C4: Blue - Challenges faced by healthcare staff.
	6	12	C7: Red - Institutional resources and limitations.
	9	20	C8: Magenta - Interdisciplinary collaboration.
Category 3: Emotional experiences and subjective burden among nursing staff.	9	20	C9: Dark green - Emotional impact and work-related stress.
Category 4: Nursing knowledge and professional competencies.	7	15	C1: Yellow - Previous knowledge of respiratory complications.
	9	21	C2: Orange - Importance of ICU experience.
	8	18	C5: Gray - Continuing education.
	6	12	C10: Pink - Self-directed learning and individual updating.
	8	18	C11: Dark yellow - Specific role of nursing staff.
Category 5: Clinical practices and care management strategies.	7	16	C6: Green - Mitigation strategies: protocols and checklists.
	7	14	C12: Dark blue - Infection management and bacterial resistance.
	6	13	C13: Cyan - Use of records and logbooks.

Source: Prepared by the authors.

The construction of the subjective and intersubjective dimension was achieved through an in-depth analysis of the study participants' testimonies, complemented by their classification into thematic categories based on the similarities and differences related to the object of research. From this analysis, and drawing on Colaizzi's model, the main categories that guide the interpretation of the findings emerged:

Factors associated with the risk of respiratory complications

This category presents nursing staff's perceptions of the risk factors that influence the onset of respiratory complications in critically ill patients. Nurses recognize that

respiratory problems are not the product of a single factor, but of the complex interaction among the patient's clinical conditions, medical interventions, and the limitations of care practice; therefore, recognizing these elements is essential for anticipating risks and optimizing preventive management in critical care units, thereby ensuring safety and quality of care. This analyzed reality is evident in the following testimonies:

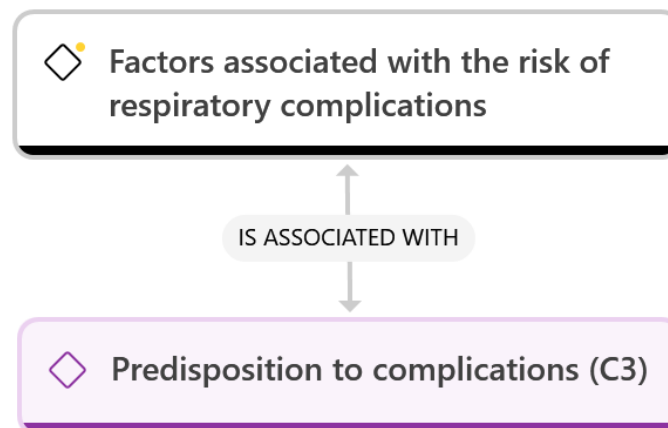
“The greatest risk is in patients on prolonged mechanical ventilation (...) the use of sedatives, immobility, and poor positioning promote respiratory complications” (E1) (E8).

“Obese patients or those with prior lung conditions are at greater risk of complications (...) the lack of early physiotherapy also plays a role (...) and often the patients' age” (E2) (E8) (E10).

“The factors that increase the risk are poor oral hygiene, prolonged intubation, and inadequate suctioning of secretions” (E3) (E5).

“Prolonged mechanical ventilation is one of the main factors for nosocomial infections, together with altered levels of consciousness, respiratory history such as COPD, advanced age, nutrition inadequate to the patient's condition, and improper airway management” (E7).

Figure 1: Category 1: Risk factors.



Source: Prepared by the authors.

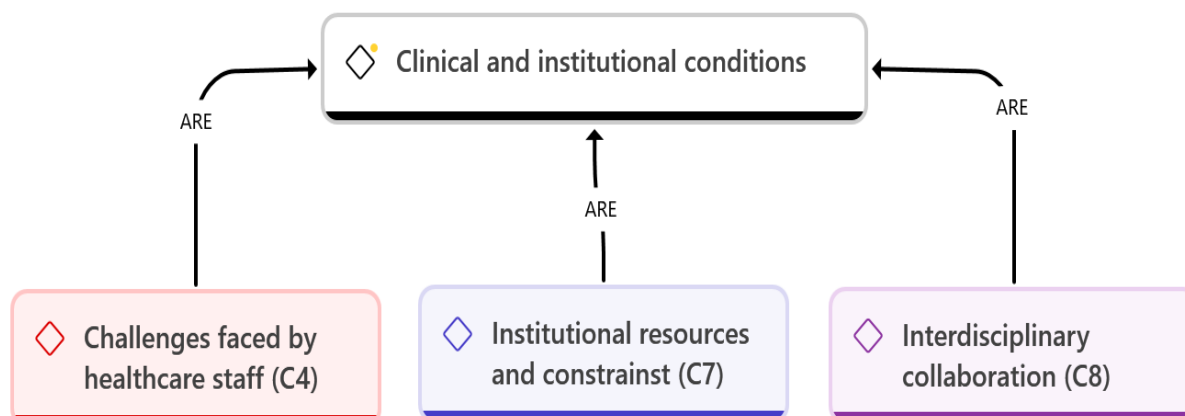
The perceptions of nursing professionals suggest that the ICU care environment is characterized by limited resources, whether due to equipment failure, shortages of supplies, or the use of materials past their useful life; this forces improvisation and hinders comprehensive care. These shortcomings are aggravated when interdisciplinary coordination is compromised, which causes delays and increases risk for the patient; added to this are the challenges inherent to nurses, who must respond to emergencies with insufficient staff and simultaneously prioritize patients with urgent needs. In this regard, this category presents the determinants associated with the onset of respiratory alterations in unstable patients, as expressed in the following accounts:

“It is difficult when few pieces of equipment are working properly, because if a decompensated patient is admitted we have to wait for a ventilator to free up (...) the lack of certain supplies such as cannulas, humidifiers, or complete equipment sometimes means we cannot act immediately (...) so we have to make do with what we have, even if it is not ideal” (E1) (E3) (E4).

“The physician's support is essential; when respiratory complications arise, we must act together to decide whether to change parameters or perform maneuvers (...) communication among nursing, physiotherapy, and medicine is key; if we do not organize ourselves, interventions are delayed and the patient decompensates” (E2) (E3).

“The greatest challenge is managing emergency situations when we do not have the full staff, because the burden falls on whoever is available (...) the hardest part is when there are several critically ill patients at once; you have to prioritize, but they all need something urgent, and that creates pressure” (E1).

Figure 2: Category 2: Hospital environment.



Source: Prepared by the authors.

Emotional experiences and subjective burden of nursing staff

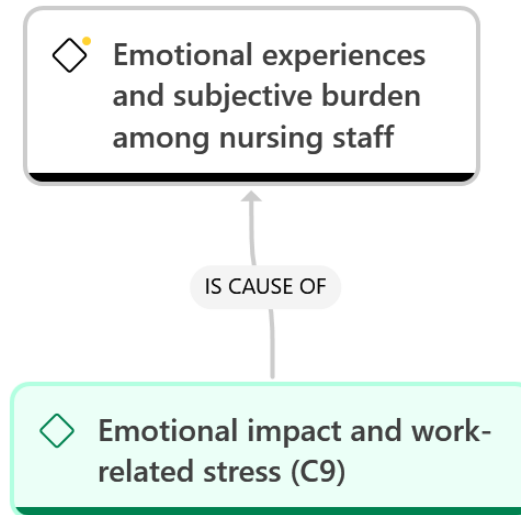
This category brings together the meanings constructed from nursing staff's narratives regarding the emotional burden associated with the care of critically ill patients with respiratory complications. Participants describe an experience marked by constant stress, anxiety, and a sense of physical and psychological exhaustion; added to this are the clinical severity of the patients, work overload, and long shifts, elements that intensify everyday tension. The testimonies reveal the emotional complexity that accompanies care practice in the ICU;

“With a critically ill patient, the emotional side greatly affects nursing staff (...) managing your emotions, coping with pain and anxiety, handling stress and fatigue; you can end up burned out emotionally and physically (...) Working in the ICU is stressful, because of the severity of the patients and the work overload; there are shifts that do not let you rest, and that takes an emotional toll” (E1) (E2).

“Caring for multiple critically ill patients with multiple medications, infusion pumps, and ventilation generates stress, especially when the hospital infrastructure is insufficient (...) in crisis situations, we have to manage with the resources available, which increases the emotional pressure until the patient is stabilized (...) The emotional exhaustion builds up; sometimes you cry, because the shifts are very long and the environment is tense, but we try to stay calm” (E6) (E8) (E10).

“Seeing patients die every day, or seeing how patients deteriorate, sometimes from one day to the next or within hours, affects you (...) over time you get used to it, but there is always a strong emotional impact” (E7).

Figure 3: Category 3: Emotional burden in nursing.



Source: Prepared by the authors.

Nursing knowledge and professional skills

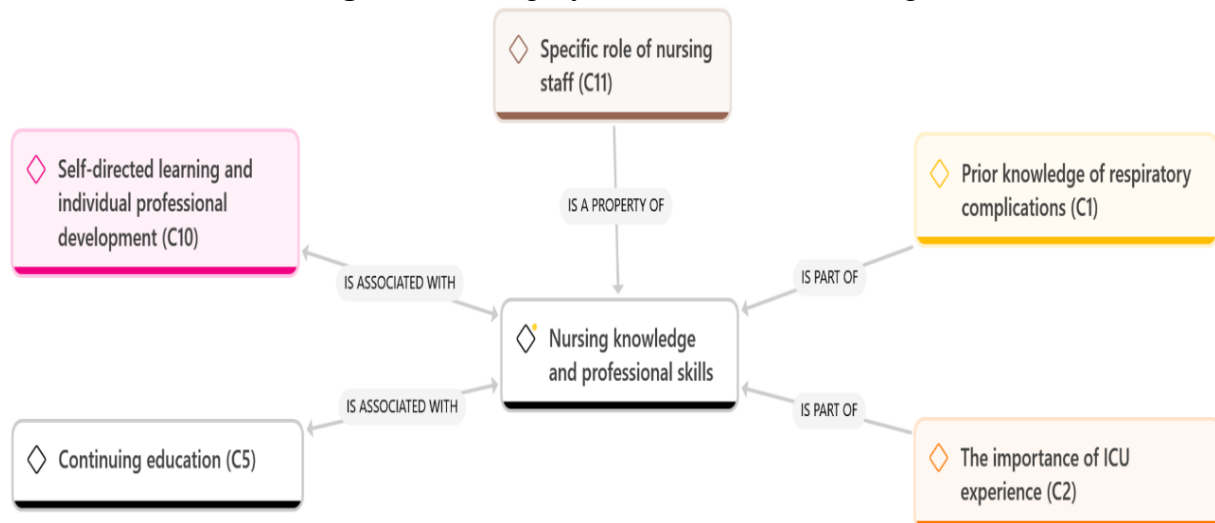
This category identifies the prior knowledge and experiences of nursing professionals related to the most frequent respiratory complications in critically ill patients. Nursing professionals working in the ICU agree that, when they first begin to work in this area, their knowledge of the management of critically ill patients and mechanical ventilation is general and basic. Therefore, acquiring skills becomes essential in order to avoid errors. It is also stated that continuing education and self-directed learning strengthen techniques, expertise, and evidence-based criteria for delivering quality care, since the performance of these professionals must involve judgment and actions proper to their profession, as the participants express:

“I did have knowledge of the basics and the general aspects (...) there was no critical care subject, only generalities, without complications such as ARDS, VAP, atelectasis, or embolisms” (E2) (E4).

“Continuing education keeps us up to date on techniques to prevent complications, and professionals must stay aware of new research in order to refine their skills through the correct application of protocols (...) nursing must act alongside the physician, be at the airway, and, in places without a physiotherapist, these procedures are nursing's responsibility” (E2).

“We must always educate ourselves and learn beyond the basic knowledge. If I do not train myself, if I do not follow a guideline, I can cause harm (...) we set aside what matters: science-based technique” (E2) (E4).

Figure 4: Category 4: Professional training.



Source: Prepared by the authors.

This category details the mitigation strategies that exist and are applied by nurses to counter respiratory complications in critically ill patients. These ICU professionals implement alternatives based on standardized institutional protocols and daily checklists to reduce problems; in doing so, they foster the healthcare team's adherence to care practices for the effective management of infections and the control of bacterial resistance, drawing on records and logbooks that enable rigorous epidemiological surveillance, according to the statements collected:

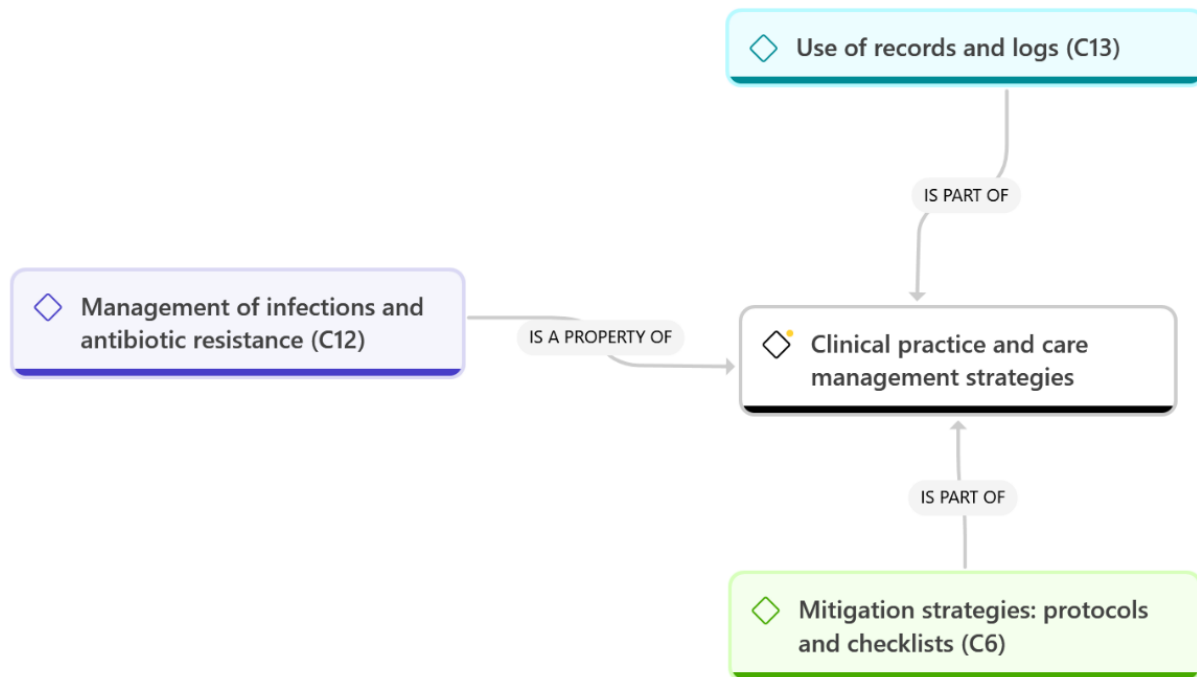
“We have protocols for suctioning secretions, hand washing, and patient safety (...) and for the prevention of ventilator-associated pneumonia” (E5) (E8).

“We have a checklist to verify that hand washing, glove use, and the intubation steps are carried out” (E4).

“Hand washing is key (...) contamination occurs when the area and the instruments are not cleaned well, because when the area is not properly disinfected (...) the next patient acquires the same germ” (E3).

“We have a committee called the HAI committee, which trains us and constantly assesses our compliance with the established protocols (...) in the ICU we keep the logbook, which is a legal record where the checklist actions are noted, and this is done across all three shifts” (E1) (E7) (E9).

Figure 5: Category 5: Clinical care management.



Source: Prepared by the authors.

Overall, the results of the present study made it possible to understand in depth the experiences and perceptions of nursing staff in the ICU, revealing not only the complexity of respiratory management in critically ill patients but also the multiple factors that influence professional performance. Structural, emotional, and technical aspects were identified that interact in a constant cycle of organizational tension, mental exhaustion, and coping strategies that make it possible to sustain commitment and quality of care. These findings reflect the daily reality of the healthcare team and underscore the need to strengthen training, improve institutional conditions, and foster interdisciplinary collaboration in order to optimize both clinical outcomes and staff well-being.

DISCUSSION

The present study examined nursing staff's perceptions of the respiratory complications of critically ill patients in relation to direct care, addressing this issue from various angles.

According to the data obtained, respiratory complications in critically ill patients are perceived as a multifactorial phenomenon, influenced by clinical, organizational, and human elements. These perceptions are consistent with Plotnikow et al.,⁽¹⁹⁾ who state that advanced age, sepsis, a previous failed attempt at noninvasive ventilation, and extubation failure increase the risk of respiratory complications and mortality in patients on mechanical ventilation in the ICU. Therefore, the concordance between clinical experience and scientific evidence underscores the importance of promptly identifying predisposing conditions, which is essential for strengthening respiratory care management, improving the chances of survival, and, consequently, patients' quality of life.

In addition, the conditions of the hospital environment emerge as a key factor, especially in settings with limitations or a lack of resources, as documented in the international literature. It is therefore recognized that the clinical and institutional environment directly

influences the quality and continuity of care, whereas the cohesion of interdisciplinary work fosters patient-centered practices and enables efficient coordination and communication.

In light of the above, when these conditions are not optimal, factors arise that hinder the delivery of care. By contrast, insufficient resources, work overload, and organizational limitations are associated with greater operational difficulties, emotional strain, and delays in the care response of nursing staff^(20,21). Consistent with this background, the participants' narratives reveal that the clinical setting shapes the way interventions are prioritized and carried out, and it may interfere with the timeliness and safety of the care provided in critical situations.

Working in the ICU entails a considerable emotional burden for nursing staff; thus, the results reflect high levels of stress and professional burnout, in line with recent research on burnout in the ICU. Ahmed et al.⁽²²⁾ note that insufficient resources and the increased accumulation of work are critical determinants of nursing staff's subjective burden. In addition, the global shortage of personnel aggravates care quality, making it imperative to create environments that mitigate psychological fatigue and comprehensively promote nurses' well-being.

Within this framework, the integration of multidisciplinary teams contributes to holistic patient care and to the redistribution of responsibilities, thereby easing the individual burden on nursing⁽²³⁾. The study's analysis supports the implementation of emotional support mechanisms and anti-stress strategies to enhance resilience and care excellence in the ICU, fostering healthy work environments.

Furthermore, continuing education is positioned as a pillar for raising the quality of care, which reinforces the need to strengthen institutional policies aimed at training and at feedback on clinical practice. Mikhridinova et al.⁽²⁴⁾ define professional competence in nursing as the set of knowledge, skills, and attitudes that contribute to performing effectively, especially in the ICU, where tasks are highly demanding and specialized. Recent studies show that evidence-based training outperforms traditional training in the management of mechanical ventilation⁽²⁵⁾.

In addition to the above, numerous studies agree that nurses need to stay up to date on directives and guidelines, thereby linking theoretical knowledge with clinical practice^(26,27). In sum, the building of competencies among ICU nursing staff is a continuous and dynamic process that integrates expertise, ongoing updating, self-learning, and ethical responsibility, so as to ensure dignified care, above all when respiratory complications arise in critically ill patients.

Finally, protocols and checklists are essential for managing complexities and preventing errors; this helps deliver standardized care grounded in the highest-quality evidence, as noted by Weng et al.⁽²⁸⁾. Likewise, Liao et al.⁽²⁹⁾ maintain that efficient record-keeping and data digitization ensure continuity of care and precision in interdisciplinary management. From a nursing perspective, these instruments are essential for structuring and guiding care management in the ICU, providing clarity, support, and cohesion to the team.

CONCLUSIONS

From the experience of nursing staff in Ecuador's public intensive care units (ICUs), respiratory complications in critically ill patients constitute an inherently multifactorial and complex phenomenon. It brings together clinical risks such as prolonged mechanical ventilation, immobility, comorbidities, and airway management; institutional barriers such as resource shortages and deficient interdisciplinary coordination; and subjective burdens that include chronic stress, burnout, and emotional fatigue.

In addition, these professionals' narratives reveal technical, emotional, and organizational tensions that shape care management. In this context, professional adaptability and standardized protocols emerge as strategic pillars for mitigating risks and sustaining patient care. It is worth noting that the results show how surveillance capacity, decision-making based on clinical judgment, and teamwork constitute central aspects of care quality.

This understanding, drawn from the voices of local nurses, enriches the contextualized evidence within Latin American knowledge on intensive care and demonstrates that updating knowledge strengthens professional practice and supports a more timely response to critical situations. For this reason, it is recommended that continuing education in advanced respiratory competencies be promoted, along with the technological provision and environmental conditions of the ICU, and that psychosocial support programs be established to prevent professional burnout.

Taken together, these findings point toward the creation of public policies aimed at optimizing patient safety and the sustainability of the healthcare team in contexts of high care complexity.

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