Journal of PeriAnesthesia Nursing 39 (2024) 409–416

Contents lists available at ScienceDirect

Journal of PeriAnesthesia Nursing

journal homepage: www.jopan.org

Research

"*A Certainty for you Does Not Mean That it is a Certainty for Science*": A Phenomenological Analysis of Experiences of Uncertainty in Clinical Reasoning of Nurses in the Postanesthesia Care Unit

Lara D.M. Cunha, PhDc, RN[a,c,*], Márcia Pestana-Santos, PhD, RN[b,c], Lurdes Lomba, PhD, RN[b,c], Margarida R. Santos, PhD, RN[a,d,e]

[a] *ICBAS School of Medicine and Biomedical Sciences, University of Porto, Porto, Portugal*
[b] *Scientific-Pedagogical Child and Adolescent Health Nursing Department, Nursing School of Coimbra (ESEnfC), Coimbra, Portugal*
[c] *Health Sciences Research Unit: Nursing (UICISA: E), Nursing School of Coimbra (ESEnfC), Coimbra, Portugal*
[d] *Scientific-Pedagogical Child and Adolescent Health Nursing Department, Nursing School of Porto, Porto, Portugal*
[e] *Center for Health Technology and Services Research (CINTESIS@RISE), Porto, Portugal*

Keywords:
clinical reasoning
patient safety
postanesthesia nursing
uncertainty

A B S T R A C T

Purpose: To explore the experiences of uncertainty in the clinical reasoning of nurses in the postanesthesia care unit (PACU).
Design: A phenomenological descriptive design, following Colaizzi's analysis.
Methods: Semistructured interviews were conducted with 14 nurses from a PACU on their experience of uncertainty in clinical reasoning. The interviews were digitally audio-recorded and transcribed *verbatim*. Two researchers conducted data analysis independently and followed seven phases: (re)reading the transcripts, extracting significant statements, formulating meanings from significant statements, aggregating formulated meanings into themes, developing a description of the phenomenon's essential structure, generating of the fundamental structure of the phenomenon, validating of the findings through participant feedback. The process employed MAXQDA analytics Pro 2022 software. Consolidated Criteria for Reporting A Qualitative Research checklist was used for reporting.
Findings: From uncertainty experiences in nurses' clinical reasoning, 10 themes emerged: ambiguity and decision latitude, communication, work ethic, difficulty interpreting and predicting outcomes, cognitive performance impairment, incivility, core competence vagueness of postanesthesia nurses, high-tech care, (in)security and risk, and occupational stress.
Conclusions: The experiences of uncertainty in clinical reasoning of nurses in postanesthesia care units are highly focused on patient safety. Exploring these experiences has made uncertainty more tangible and explicit, which will enable nurses in postanesthesia care units to prepare for adaptive responses to deal with uncertainty when it occurs in clinical practice.
© 2024 American Society of PeriAnesthesia Nurses. Published by Elsevier Inc. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

Safe and successful recovery after surgery requires patient-specific postoperative care, in which nurses make complex decisions based on careful and distinctive assessment.[1] This requirement for accurate clinical reasoning and working proactively at a fast pace with the patient demands that the nurse in the postanesthesia care unit (PACU) plan appropriate and complex care with specific core competencies.[2]

A critical aspect of the effectiveness of PACU nurses' decision-making relates to the complexity of clinical reasoning based on the interpretation of imperfect and usually incomplete clinical data.[3] The complex information process under uncertainty, in which reasoning may not be justified in light of available knowledge, leads to a metacognitive effort required to reflect on the uncertainty, and on the actual and potential responses best suited to the situation.[4] This normative challenge must recognize uncertainty as metacognitive consciousness and openness toward acknowledging ignorance.[5]

The response to these uncertainties is mediated through strategies focused on different targets: ignorance, uncertainty, the responses to uncertainty, the person who experiences it.[4] Uncertainty tolerance is 'an

* Address correspondence to: Lara D.M. Cunha, Health Sciences Research Unit, Nursing (UICISA: E), Escola Superior de Enfermagem de Coimbra, Polo C, Avenida Bissaya Barreto, 3046-851 Coimbra, Portugal.
E-mail address: enflaracunha@esenfc.pt (L.D.M. Cunha).

https://doi.org/10.1016/j.jopan.2023.08.024
1089-9472/© 2024 American Society of PeriAnesthesia Nurses. Published by Elsevier Inc. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

individual's dispositional incapacity to endure the aversive response triggered by the perceived absence of salient, key, or sufficient information, and sustained by the associated perception of uncertainty.[6] Thus, uncertainty tolerance is on a spectrum of maladaptive/resistance or acceptance/attenuation. What determines the appropriateness of responses to uncertainty is not purely nurses' logical consistency, but the extent to which it allows individuals to adapt to the uncertainties they experience.[4]

A recent integrative framework for uncertainty management,[4] with a set of normative and systematic goals, aims to acknowledge the fallibility of one's own knowledge, the unrealistic epistemic expectations, and how individuals can tolerate health care uncertainty. To assess the uncertain situations, tasks are defined, namely: establishing a diagnosis (source, issue, locus), assessing prognosis (reducible or irreducible), clarifying goals (ignorance-focused, uncertainty-focused, response-focused, person-focused), and determining treatment (cure, palliation, tolerance). Adding to this framework, Luhmann and colleagues[7] research presents evidence that people with low uncertainty tolerance tend to choose options that are riskier and less beneficial, as long as they involve less waiting time in an uncertain situation. Other recent work related to the COVID-19 pandemic showed that nurses experienced challenging emotions in the context of uncertainty, which led to long-term mental health challenges.[8] Additionally, Thorne[9] underlines the importance of nursing in uncertain times, in which nurses demonstrate a sense of service in complex and compromised conditions.

Although there are studies related to patients' experience of uncertainty in illness,[10–12] there is a paucity of research on health care providers' experiences of navigating uncertainty, especially the nurses. From a practical point of view, the effort to reduce the uncertainty associated with health care takes time for the diagnostic investigation to be completed, and the intervention results manifest. From a theoretical point of view, many uncertainties are simply not reducible by adding new information through quality empirical evidence, as there is not definitive answer to provide the 'right' care for a given patient. Understanding the experiences of uncertainty in clinical reasoning is an extremely important task and deserves attention as nurses deal with uncertainty to provide safe care. Better characterization of uncertainty experiences can show strategies to manage it more effectively in clinical practice. Therefore, the aim of this study is to explore the experiences of uncertainty in the clinical reasoning of nurses in the PACU.

Methods

Study Design

The design of this study is a phenomenological descriptive design following Colaizzi's data analysis.[13] Husserl's[14] descriptive phenomenology approach was adopted to interpret the phenomenon through the essence of the experience revealed by the participants' voices, retaining them without abstracting their point of view through analysis.

To ensure explicit and comprehensive reporting of the study the consolidated criteria for reporting qualitative research (COREQ) checklist[15] was applied.

Ethical Considerations

Ethical approval (date: 14/04/2022, code: 260 CES) was obtained from the ethics committee of the research unit of a university central hospital where the study was carried out. Informed consent was obtained from all participants before the interview. The confidentiality of participants' statements was preserved using letters and numbers to code (eg, P1).

Participants

Fourteen participants were recruited using an information e-leaflet regarding the type of study, research purpose, and data collection methods. The first author asked the nurse manager to share the research opportunity with PACU nurses via an institutional email announcement. Interested nurses contacted the first author who performed additional screening to verify their eligibility.

A convenience sampling was used. Nurses who provide post-operative care in phase I,[16] in the adults PACU, were selected to participate in the study. The nurses were recruited from only one PACU, with an average of 30 to 35 surgeries per day and 8,478 admissions per year, on average. Postanesthesia care was provided to all surgical specialties (urology, general, maxillofacial, plastic and reconstructive, vascular and angiology, dermatology, gynecology and obstetrics, neurosurgery, orthopedics, genito-urinary, and sexual reconstructive unit), nonsurgical (arrhythmology, hemodynamics, neuroradiology, psychiatry—electroconvulsive therapy), special programs (brain aneurysms, liver transplantation, kidney transplantation) and multidisciplinary approach to acute and chronic pain. Nurses in training and integration were excluded. All nurses who expressed interest in participating in the study were included and none dropped out.

Data Collection

Data were collected using a semi-structured interview guide based on the results of a previous literature review[17] (Table 1) and were digitally audio-recorded with the participants' consensus.

Data were collected from April to May 2022 at the anesthesiology service in a quiet room. Each participant was interviewed once by the same researcher (first author). The researcher is a doctoral student, and was trained by the research team, who have extensive experience in qualitative research. Furthermore, the participants knew in advance the academic reasons for carrying out the research. Biases and preassumptions were not reported by the participants. Only the interviewer and the participant were present during the interview time.

The interviews ranged from 30 to 64 minutes (average 45 minutes). Field notes were written promptly after to clarify speech pauses. After the transcription, each interview returned to the respective participant for validation. Since the interview was conducted in the native language of the participants, Portuguese, the linguistic validation process included direct translation (two independent nurses translated the source material into the target language). The translations were then combined into the best version of both translations. The back-translation (into the original language) was elaborated, and the final revision carried out.

Data saturation was reached with 10 interviews, meaning that no new information was found in the additional data.[18] However, all the 14 nurses who were willing to participate in the study were interviewed.

Table 1
The Semi Structured Interview Guide

Questions
1. What is uncertainty for you?
2. What is your perception of uncertainty related to the clinical reasoning of nurses in the postanesthesia care unit?
3. In what situations of clinical practice does (or can) uncertainty occur in the clinical reasoning of nurses in the postanesthesia care unit?
4. Thinking about your personal experience and your knowledge of working in the postanesthesia care unit, how do you think the uncertainty is experienced in the clinical reasoning of nurses in the postanesthesia care unit?

Data Analysis and Interpretation

The interviews were transcribed verbatim to a Word document stored on the Google Drive platform with encrypted access and later migrated to data analysis MAXQDA Analytics Pro 2022 software.

Data analysis was carried out by two authors independently, following the seven phases of Colaizzi's analysis: (re)reading the transcripts, extracting significant statements, formulating meanings from significant statements, aggregating formulated meanings into themes, developing a description of the phenomenon's essential structure, generating fundamental structure of the phenomenon, validating the findings through participant feedback.[13] To reach an intercoder agreement, a meeting of all the researchers was held afterward. The themes generated across datasets were based on consensus among researchers and participants' validation.

Rigor

Data reliability was guaranteed by maintaining their authenticity. Preconceptions coming from the first author's professional background (a female medical surgical nurse specialist in PACU and doctoral student) were bracketed, by asking open-ended questions during the interview to allow participants to share their views about their experiences freely. The second author (with a background in qualitative methods) analyzed the data independently to prevent preconceived expectations. The first two authors analyzed the data and differences in interpretations were solved through discussion. Credibility was demonstrated by gathering rich and in-depth data from the interviews, transcribed literally. Content validation of results was obtained by participants, and their confirmation of the themes was reached. An external audit was carried out by the remaining authors, who checked the transcripts and analysis of the interviews to ensure accuracy.

Results

The demographic characteristics of the participants are presented in Table 2.

Ten themes emerged from uncertainty experiences in nurses clinical reasoning: (1) ambiguity and decision latitude, (2) communication, (3) work ethic, (4) difficulty interpreting and predicting outcomes, (5) cognitive performance impairment, (6) incivility, (7) core competence vagueness of PACU nurses, (8) high-tech care, (9) (in)security and risk, (10) occupational stress. The steps of Colaizzi's phenomenological data analysis are presented in the supplementary file 1. Figure 1 presents the emergent themes and the cluster of themes mentioned above.

Table 2
Demographic Characteristics of the Participants (N = 14)

Demographic Characteristics	n	%
Gender	4	28.6
Male	10	71.4
Female		
Age	4	28.6
(30-39 years)	7	50
(40-49 years)	3	21.4
(50-59 years)		
Qualification	8	57.2
Without any nursing specialization	3	21.4
Medical surgical nursing specialization	2	14.3
Mental health nursing specialization	1	7.1
Community health nursing specialization		
Higher academic degree	11	78.6
Bachelor's degree (4 years)	3	21.4
Master's degree (4 + 2 years)		
Experience as a Nurse	4	28.6
10-19 years	10	71.4
> 20 years		
Experience as a Nurse at PACU	3	21.4
< 10 years (10-19 years)	7	50
> 20 years	4	28.6

Emergent Theme 1: Ambiguity/Decision Latitude

Participants highlighted the problems in the decision-making process between two or more possible options and the subjective assessments that can be biased or influenced.

> *"Uncertainty conditions reasoning. When you are managing the unit, you try to distribute a less complicated patient when a colleague already has a complicated patient, who requires a great workload."* P4

> *"They always need validation. This uncertainty is based on having security in a subject, on the perception of a medical diagnosis, and even a nursing one. Pain, for example. Sometimes there is an uncertainty of saying 'this patient is really in pain."* P3

Emergent Theme 2: Communication

Uncertainty related with communication involves the disagreement that arises and increases the odds of a negative outcome, and the fear of being misunderstood.

> *"Communication is the basis of the possible solution or the possible minimization of uncertainty. Sometimes many conflicts and problems arise precisely because the communication is not as assertive or as structured as it should be. The information does not get there."* P14

> *"If you are humbler in your search for knowledge, you can easily ask a younger colleague or ask questions with a younger colleague who you think is a reference. At the beginning, we can ask all kinds of questions, however incorrect or absurd they may seem. The further forward it goes, the harder it becomes. Sometimes there are no opportunities to ask questions. When you have to do it, they demand it from you! In an emergency context, there is not much room to think about what to do. You have to act fast."* P2

Emergent Theme 3: Work Ethic

The participants considered as work ethic that nurses employ in clinical practice a form of weighing the risk in which an action will hurt a patient against its potential to improve the clinical condition. This issue includes responsibility towards the patient (ensure safe care), and responsibility as a professional: competence and morality recognized by nurses to correct course of action to follow, regardless the objective of their intervention.

> *"Having the notion that I may not be doing everything I should and how I should do it, really disturbs me. Knowing that my actions can result in something negative for the patient is completely against my basic principle of trying my best to do my part in helping the patient to go through that process in the most serene, peaceful way possible, and ensure that everything useful and necessary for the patient's maximum benefit has been done."* P6

Emergent Theme 4: Difficulty Interpreting and Predicting Outcomes

Participants revealed difficulty interpreting and predicting outcomes when a clinical situation is characterized by a high degree of

Figure 1. Uncertainty experiences in nurses' clinical reasoning emergent themes, and cluster of themes. This figure is available in color online at www.jopan.org.

uncertainty, and when complex and rapid priority care management is mandatory for patients with multi-organ failure.

> *"There are situations where we try to intervene and there are some situations where the situation is irreversible. We must be aware of this. We cannot always be sure that this is possible."* P8

> *"When you have a patient with a major surgery, critical, with ventilatory support, with amine support, you have to weigh it very carefully. You have to see the risk/benefit, because there is uncertainty. I am going to do complete hygiene, massage, and put the patient in a comfortable position. If I am 100% sure that I am not going to make anything worse, I will do so. Critically ill patients, I am not 100% sure."* P13

Emergent theme 5: Cognitive Performance Impairment

Cognitive performance impairment was described by participants as a restriction of the rationality of optimal decision-making by the cognitive limitations of the decision-maker, and the unconscious neuroception.

> *"I think this uncertainty is not talked about between us. But the fact that nurses do not care about certain kinds of things, reveals a lot of that uncertainty. I think people react too benignly."* P10

> *"There are also these three types of nurses: those who learn to manage such a situation of uncertainty and the consequences that behavior brings, which later create new problems; and those that continue to insist and do what they think is more correct. Then there are other nurses who give up a little bit because they think that the hassle they sometimes have does not make up for the result afterward."* P12

Emergent Theme 6: Incivility

Participants report incivility in unacceptable and unethical practices based on authoritarianism and asymmetry of power and mistrust.

> *"I acknowledge people who do not humiliate and who share their knowledge. Those who enrich the other colleagues and provide care in a pedagogical way. People who have knowledge and help us pedagogically to reduce our uncertainty. We end up feeling better by questioning these people because we feel that we are not subjected to humiliation. Instead, they help us in our acquisition of knowledge and training."* P1

> *"Some time ago, this was a sign of incompetence. You may be competent, but you are not competent in everything. Neither you nor anyone else. There were those who knew everything and others who did not know anything."* P11

Emergent Theme 7: Core Competence Vagueness of PACU Nurses

The misconceptions that diminish the importance of the other's competencies, and the ill-defined roles that constrain effective interprofessional collaboration, were described as contributors to the vagueness of the core competencies of PACU nurses.

> *"Given the danger to the patient and trying to find some objectivity in my subjective analysis, for example, arguing with the doctor when he was willing to send a patient away from the unit and that in the face of a certain sign of danger justifies keeping the patient in our care."* P6

> *"It is more a matter of a person not knowing what they have in institutional and organizational terms. It is more about that than the work itself."* P10

Emergent Theme 8: High-Tech Care

The difficult compliance of health care providers related to high-tech market news, and the poor access to best evidence and guidelines, were referred by participants as uncertainty related with high-technology care.

> *"We have all types of patients, with all types of pathologies, with all types of procedures. And sometimes not all of us are always prepared to meet these new challenges. Sometimes there are new procedures, done here, that we are not used to. Sometimes we do not know the material well. There are situations where we have doubts."* P8

Emergent Theme 9: (In)Security and Risk

The aspects related to safety and risk management listed by the participants were: the situations of clinical underestimation, the discrepancies between practice and evidence-based practice, and the delayed awareness related to signs and symptoms of surgical or anesthetic complications.

> *"I think that many times, it is a bit of "guessing" and not scientific research or the search for certainties. Proven certainties, recognized and accepted by the scientific community. I think it is a bit'I have been doing it this way for 20 years'. I think this happens a lot, quite often. More than would be desirable."* P9

> *"You have a neurosurgery patient who comes in and you are settling the patient in and everything is ok. Suddenly an intracranial hemorrhage occurs, and you have no control, except in the vital parameters, blood pressure, which you can alert. Your action is fundamental. When you get to the critical part, cardiac arrest or precardiac arrest, if you haven't warned, haven't approached, or haven't insisted, then it is your failure. You keep showing all the critical signs and if they do not pay attention to them, you have your action limited."* P11

Emergent Theme 10: Occupational Stress

Participants considered occupational stress related with the maintenance of the professional image in front of the multidisciplinary team.

> *"There are some people who are more aggressive when detecting an error or if they cannot communicate well the most correct way to act in a given circumstance, which inhibits others from clarifying doubts. I think that moments of frank sharing, in which people can feel like equals, despite diverse knowledge, experiences, and skills, which are in fact at the same level of discussion, can only bring benefits. Knowledge dies if we do not share it. Unfortunately, many people, for self-protection of the image they want to convey, end up not being able to share everything they know, everything they have experienced. Ultimately, it turns out to be harmful for the team and for the patients."* P6

Discussion

Ten themes emerged for the phenomenon of experiences of uncertainty in the clinical reasoning of nurses in the PACU. The results of the study show that the structure of the phenomenon is complex, multifactorial, and of great relevance for nurses, such as the narratives' richness. This demonstrates the holistic and comprehensive understanding of the phenomenon gained by using Colaizzi's method.

The quality of information used to support decision-making is hardly ideal. Many decisions are made under conditions of uncertainty, resulting from ambiguous or conflicting information.[19] This aspect becomes more pressing when there is conflicting information,[20] referred to as entries from multiple sources that disagree with each other (eg, when clinical practice disagrees with evidence-based practice). Also, in decision-making process dilemmas, there is a greater aversion to conflict information than ambiguous information because of their outcomes' perception. This is consistent with our findings, as contradictions and the inability to control all variables are included in the information conflict. Additionally, the participants denoted decision latitude related to the ambiguity of the subjectivity evaluation. Thus, behavior in the face of uncertainty may change according to the chance of a desirable outcome of an ambiguous or conflicting alternative compared with an equivalent risky alternative.

Ineffective communication in care theater can lead to conflicts between health care providers. Conflict management in a perioperative environment can involve recognizing and self-managing emotions during conflict, improving the team's active listening skills and collaborative problem-solving.[21] Participants mentioned conflict management and clarifying doubts related to communicational uncertainty. This identification of potential areas for improvement and the stimulus for change can be seen as a developing competency, which results in employalty, greater job satisfaction, and stronger working relationships.[22] The miscommunication becomes even more prominent when approaching the handover in the PACU. In Servas and colleagues' research,[23] the cocreation and implementation of an instrument for a standardized transfer allowed information loss reduction, handover quality improvement, and satisfaction increase of the perianesthesia nurses. Ultimately, it can mitigate patient safety events. Normalizing uncertainty can be an effective strategy to mitigate communication problems.[24]

Also, patient safety relates to ethical work. It means that health care providers are doing their best to provide safe care. Insufficient time, too many priorities, and insufficient resources are listed as barriers to leading a safety culture.[25] Nurses must learn to successfully advocate for safe care and professional work environments. Notwithstanding, nurses may experience compassion fatigue, defined as emotional, physical, and spiritual depletion related to secondary trauma exposure.[26] The overwhelming patients' experience countertransference is associated with impacts on work quality, nursing retention, and turnover.

Caring for the person in the PACU clinical setting is a challenge for the health care providers. The potential complications and the latency of adverse events contribute to the difficulty of interpreting and predicting outcomes. The results of this study elucidate the complexity related to the recognition of clinical deterioration, postanesthesia complications, and critical care management. Missed or delayed diagnoses are a commonly contributing factor to post-anesthesia severe outcomes.[27] Findings validate the need to maintain a high index of suspicion for complications in a setting where most patients may follow unpredictable paths. If nursing practice runs into absolute uncertainty, it is important to identify professional humility. Professional humility is defined by three essential components: being aware of our degree of uncertainty, being honest about what we can do within the limits of our competence, and admit the relevant motivational components.[28] Admitting our ignorance critically is challenging, but professional humility requires it.

Uncertainty can be aversive, cause fear, worry and anxiety, increase the perception of vulnerability, and avoidance of decision-making.[29] Moreover, it is often most ineffectively addressed because of the extreme cognitive and emotional demands.[4] In our study, the participants' cognitive performance impairment was associated with demotivation. Motivation is based on a cognitive-behavioral cycle, in which individuals guide their behavior based on goals and also how they assign value to it (whether something is worthwhile or not), which triggers motivated behavior.[30] Demotivation can be bridged by conveying safety and confidence, a sense of usefulness and competence. Perhaps, nurses in PACU can ameliorate the effects of uncertainty perception limitation, namely cognitive blocking, awareness default, demotivation, deresponsibilization. By becoming aware, nurses take an active role in their accountability.

The promotion of a civility culture is crucial for healthy work environments and safe care. However, 83% percent of nurses report incivility in health care.[31] Nurses' workplace ambiance disruption, frequently reported in medical-surgical wards and in intensive care units, were associated with poor patient safety culture perceptions.[32] Chaotic situations, unpredictable conditions, stressful atmospheres, and limitations in the processes for evaluating the effect of interventions and care can expose nurses to incivility.[33] These conditions are equally present in the PACU clinical setting. Additionally, feelings of powerlessness in the workplace increase internal senses of ineffectiveness, reduce job satisfaction, increase levels of burnout, and intensify feelings of self-resignation.[34] This relates to the participants' narrative linked to professional discredit, condemnation, and disrespect for individuality.

In the care systems where there is physician dominance, nurses' perceived reduced autonomy and their perceived psychological empowerment affect the work environment and professional practice.[34] This aspect is also emphasized by the participants regarding the hegemonic biomedical background and, consequently, for the disbelief in nurses' skills. Wang and Liu[35] emphasized that psychological empowerment is positive both for work engagement and motivation and for creating a healthy occupational environment. Also related to PACU nurses' skills, Dahlberg and colleagues'[36] survey identified six countries where perianesthesia nursing has been recognized as a professional nursing specialty and eight countries where national standards for nursing practice were established. Although no entity related to Portuguese perianesthesia nursing participated in this study, the competencies of perianesthesia nurses in Portugal are similar to those presented in Canada, United States of America, and Greece. However, despite being recognized as a professional nursing specialty in the country by the governance board, no established national guidelines or standards of practice are issued internally, and there is no formal education for the nurse working in PACU. This underlines the concern regarding the vagueness of the core competence of nurses in PACU, mentioned by the participants. This international survey will allow the knowledge collected to be used to develop continuous education and training for PACU nurses. According to the authors, the partnership will strengthen nursing practice, identifying common denominators that characterize postanesthesia nursing.

High-tech care and technology offers new modes for health support and patients' connection.[37] To keep up with technology in constant evolution, it is urgent to adapt and be willing to change what does not diminish the value of our skill but improves it. Making an effort to follow the evidence and look for ways to blend new innovations with the face-to-face skill set is necessary. Additionally, to achieve high-quality care and increase productivity, the organizational structure should care for its employees by creating internal opportunities, access to resources and information, training and education.[34] Our results are consistent with this, in which the uncertainty associated with asymmetric accessibility to the best evidence is referenced.

Perceived competence influences uncertainty tolerance. The manifestation of reluctance toward an uncertain outcome is diminished when there is awareness that the risks in question are unknown not only to self, but to all individuals, that is, it is

unknowable.[38] This becomes pressing in the new or unusual situations in the clinical setting described by the participants. (In)security and risk is also noticeable in the normalization of the risk that nurses take and how nurses have become heroic role model, namely during the COVID-19 pandemic. The perpetuation of the narrative of nurses' self-sacrifice,[39] linked to the nursing epistemological root should contemplate a contemporary view that '*the real hero is one who advocates for patients, acts compassionately, and articulates with knowledge and reason*'.[p.318]

Occupational stress and burnout are increasingly recognized in the field of anesthesiology professionals.[40] On one hand, patients are progressively complex and new anesthetic technologies and techniques are rapidly being introduced. On the other hand, there is greater awareness of the discussion of the experience of occupational stress and related mental health problems, such as burnout. High workload, low decision latitude, poor social climate/social support, poor leadership, time pressure, high work demands and low rewards, role conflict, low autonomy, negative nurse-physician relationship, and job insecurity are identified as predictors of burnout.[41] These aspects are also highlighted in the findings of this study, and it is important to analyze them to mitigate their impact. Among the outcomes of burnout and occupational stress, reduced job performance, poor quality of care, patient safety, adverse events, negative patient experience, medication errors, infections, patient falls, and intent to leave[41] were found. The patterns identified by these studies consistently show that the adverse characteristics of the workplace have potential consequences for health care providers and patients. It becomes pressing to identify strategies that minimize the impact of uncertainty related to nurses' clinical reasoning to improve working conditions and patient safety.

Strength and Limitations of the Work

The participants included in the sample went through a wide variety of situations in which the phenomenon was experienced and provided rich data from the individual perceptual understanding of the phenomenon.

The maintenance of pure bracketing was challenging for the researchers. To ensure research trustworthiness, the phenomenon was observed in a curious and questioning way and described precisely, as did the participants. The use and meaning of terms and phrases were validated by the participants. The emergent themes are honest and transparent (reliability criteria). Also, the structure provided in Colaizzi's method of data analysis enabled transparency in this study.

This study was developed in a single PACU clinical context and at a particular level of postanesthesia care. Another limitation of the study involved nurses who met the inclusion criteria but did not express willingness to participate in the study. Nevertheless, an important factor to be considered for their selection is the interest in understanding the nature and meanings of their experiences.

Conclusion

Postanesthesia nurses may experience uncertainty related to the clinical reasoning process that involves decision-making. The assumption that nurses, regardless of experience and differentiation, can transfer skills and knowledge to any care situation, refuses to acknowledge the complex specific PACU clinical setting. This study offers a unique insight into the clinical reasoning uncertainty experiences from PACU nurses. The findings highlight the inadequate working conditions for the nurses' well-being, the technical-scientific unpreparedness that interferes with the cognitive process of nursing reasoning, and the interpersonal/multidisciplinary dynamics that condition shared decision-making.

Acknowledging how nurses perceive this phenomenon and understanding its fundamental structure is pivotal to informing best practice and, in that sense, enables to identification potential improvements in nursing practice that minimize the impact of uncertainty. By making experiences of uncertainty explicit and tangible, nurses can identify more adaptive responses to uncertainty and enhance their clinical reasoning accuracy. Since perianesthesia nurses' core competencies include advocating for the quality and safety of care, uncertainty awareness must be incorporated as a commitment.

Ultimately, nurses must determine for themselves how to convert their experience of uncertainty into their clinical practice, by recognizing the humility, flexibility, and courage to tolerate it.

Declaration of Competing Interest

All authors declare no conflicts of interest.

Acknowledgments

The authors gratefully acknowledge the support of Health Sciences Research Unit: Nursing (UICISA: E), hosted by the Escola Superior de Enfermagem de Coimbra (ESEnfC—Nursing School of Coimbra) and funded by the Foundation for Science and Technology (FCT).

Supplementary Materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.jopan.2023.08.024.

References

1. Gaffney TA, Hatcher BJ, Milligan R, Trickey A. Enhancing patient safety: factors influencing medical error recovery among medical-surgical nurses. *Online J Issues Nurs.* 2016;3:21.
2. Dahlberg K, Sundqvist A-S, Nilsson U, Jaensson M. Nurse competence in the post-anaesthesia care unit in Sweden: a qualitative study of the nurse's perspective. *BMC Nurs.* 2022;21:1–12.
3. Mohammmed Iddrisu S, Hutchinson AF, Sungkar Y, Considine J. Nurses' role in recognising and responding to clinical deterioration in surgical patients. *J Clin Nurs.* 2018;27:1920–1930.
4. Han PK. *Uncertainty in Medicine: A Framework for Tolerance*. Oxford University Press; 2021.
5. Sturmberg JP, Martin CM. How to cope with uncertainty? Start by looking for patterns and emergent knowledge. *Wiley Online Library.* 2021;27:1168–1171.
6. Carleton RN. Into the unknown: a review and synthesis of contemporary models involving uncertainty. *J Anxiety Disord.* 2016;39:30–43.
7. Luhmann CC, Ishida K, Hajcak G. Intolerance of uncertainty and decisions about delayed, probabilistic rewards. *Behav Ther.* 2011;42:378–386.
8. Nelson H, Hubbard Murdoch N, Norman K. The role of uncertainty in the experiences of nurses during the Covid-19 pandemic: a phenomenological study. *Can J Nurs Res.* 2021;53:124–133.
9. Thorne S. Nursing in uncertain times. *Nurs Inq.* 2020;2:27 e12352.
10. Bartley N, Napier C, Best M, Butow P. Patient experience of uncertainty in cancer genomics: a systematic review. *Genet Med.* 2020;22:1450–1460.
11. Nissen N, Lemche J, Reestorff CM, et al. The lived experience of uncertainty in everyday life with MS. *Disab Rehab.* 2022;44:5957–5963.
12. Cheng J, Yang D, Zuo Q, Peng W, Zhu L, Jiang X. Correlations between uncertainty in illness and anxiety, depression and quality of life in patients receiving maintenance haemodialysis: a cross-sectional study. *Nurs Open.* 2022;9:1322–1331.
13. Colaizzi P.F. Psychological research as the phenomenologist views it; 1978.
14. Husserl E. *Introduction to the Logical Investigations: A Draft of a Preface to the Logical Investigations (1913)*. Springer Science & Business Media; 2012.
15. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care.* 2007;19:349–357.
16. Schick L, Windle PE. *PeriAnesthesia Nursing Core Curriculum E-Book: Preprocedure, Phase I and Phase II PACU Nursing*. Elsevier Health Sciences; 2020.
17. Cunha LDM, Pestana-Santos M, Lomba L, Reis, Santos M. Uncertainty in post-anaesthesia nursing clinical reasoning: an integrative review in the light of the model of uncertainty in complex health care settings. *J Perioper Nurs.* 2022;35:32–40.
18. Saunders B, Sim J, Kingstone T, et al. Saturation in qualitative research: exploring its conceptualization and operationalization. *Qual Quantity.* 2018;52:1893–1907.

19. Iyer ES, Weinberg A, Bagot RC. Ambiguity and conflict: dissecting uncertainty in decision-making. *Behav Neurosci.* 2022;136:1–12.
20. Smithson M, Priest D, Shou Y, Newell BR. Ambiguity and conflict aversion when uncertainty is in the outcomes. *Front Psychol.* 2019;10:1–13 539.
21. Sinskey JL, Chang JM, Shibata GS, Infosino AJ, Rouine-Rapp K. Applying conflict management strategies to the pediatric operating room. *Anesthesia Analgesia.* 2019;129:1109–1117.
22. Gallo A. *HBR Guide to Dealing With Conflict (HBR Guide Series).* Harvard Business Review Press; 2017.
23. Servas L, Hayes C, Mayhorn T, Milner KA. Navigating the path to a sustainable "PACU Pause" and standardized perioperative handoff: a quality improvement project. *J PeriAnesthesia Nurs.* 2022;37:44–47.
24. Han PK, Scharnetzki E, Scherer AM, et al. Communicating scientific uncertainty about the COVID-19 pandemic: online experimental study of an uncertainty-normalizing strategy. *J Med Internet Res.* 2021;23:e27832.
25. Harton L, Skemp L. Medical–surgical nurse leaders' experiences with safety culture: an inductive qualitative descriptive study. *J Nurs Manag.* 2022;30: 2781–2790.
26. Hooper VD. Working toward a healthier you: recognizing compassion fatigue. *J PeriAnesthesia Nurs.* 2017;32:165–166.
27. Kellner DB, Urman RD, Greenberg P, Brovman EY. Analysis of adverse outcomes in the post-anesthesia care unit based on anesthesia liability data. *J Clin Anesthesia.* 2018;50:48–56.
28. Mercurio MR. Priorities, professional humility, and communication in the setting of medical uncertainty. *Pediatrics.* 2022;6:149 e2022056737.
29. Hillen MA, Gutheil CM, Strout TD, Smets EM, Han PK. Tolerance of uncertainty: conceptual analysis, integrative model, and implications for healthcare. *Soc Sci Med.* 2017;180:62–75.
30. Díaz-Agea JL, Pujalte-Jesús MJ, Leal-Costa C, García-Méndez JA, Adánez-Martínez MG, Jiménez-Rodríguez D. Motivation: bringing up the rear in nursing education. Motivational elements in simulation. The participants' perspective. *Nurse Educ Today.* 2021;103:104925.
31. Kroning M, Annunziato S. New strategies to combat workplace incivility and promote joy. *Nursing.* 2023;53:45–50.
32. Alquwez N. Association between nurses' experiences of workplace incivility and the culture of safety of hospitals: a cross-sectional Study. *J Clin Nurs.* 2023;32: 320–331.
33. Shoorideh FA, Moosavi S, Balouchi A. Incivility toward nurses: a systematic review and meta-analysis. *J Med Ethics Hist Med.* 2021;14:1–25.
34. Saleh MO, Eshah NF, Rayan AH. Empowerment predicting nurses' work motivation and occupational mental health. *SAGE Open Nurs.* 2022;8:23779608221076811.
35. Wang S, Liu Y. Impact of professional nursing practice environment and psychological empowerment on nurses' work engagement: test of structural equation modelling. *J Nurs Manag.* 2015;23:287–296.
36. Dahlberg K, Brady JM, Jaensson M, Nilsson U, Odom-Forren J. Education, competence, and role of the nurse working in the PACU: an international survey. *J Perianesthesia Nurs.* 2021;36(224–231):e226.
37. Stern GR. High-tech, high touch. *J Am Psychiatr Nurses Assoc.* 2019;25:410–411.
38. Chua Chow C, Sarin RK. Known, unknown, and unknowable uncertainties. *Theory Decis.* 2002;52:127–138.
39. Farris P, Stewart MW. Research news: nurses as heroes. *J PeriAnesthesia Nurs.* 2021;36:317–318.
40. van der Wal RA, Wallage J, Bucx MJ. Occupational stress, burnout and personality in anesthesiologists. *Curr Opin Anesthesiol.* 2018;31:351–356.
41. Dall'Ora C, Ball J, Reinius M, Griffiths P. Burnout in nursing: a theoretical review. *Hum Resour Health.* 2020;18:1–17.

Supplementary Materials

Supplementary File 1 - Data analysis following Colaizzi's Phenomenological Method

Examples of Significant Statements	Formulated Meanings	Cluster of Themes	Emergent Theme
'Uncertainty conditions reasoning. When you are managing the unit, you try to distribute a less complicated patient when a colleague already has a complicated patient, who requires a great workload.' P4	A problem in the decision-making process between two or more possible options	Decision-making process dilemmas	Ambiguity and Decision Latitude
'We have procedures that depend on others. It costs me a lot, and I don't know if we'll be able to do that, saying 'No, I don't do it because that's not the algorithm!' Isn't it?' P8	Individual practice versus evidence-based practice	Clinical prescription contradictions	
'Maybe the best way is to understand what the theoretical basis of a certain procedure is, and then try to follow the best practices and procedures as correctly as possible. Even doing all of this steps, there may be situations that get out of control.' P6	A factor that is not regulated or measured by the nurse during practice	Inability to control all variables	
'This uncertainty basement on having security on a subject, on the perception of a medical diagnosis and even a nursing one. Pain, for example. Sometimes there is an uncertainty of saying 'this patient is really in pain'. P3	An assessment or evaluation that might be biased, opinionated, or influenced (eg, pain assessment, state of consciousness alteration, patient compromised communication, hetero assessment instruments	Subjectivity evaluation	
'Communication is the basis of the possible solution or the possible minimization of uncertainty. Sometimes many conflicts and problems arise precisely because the communication is not as assertive or as structured as it should be. The information does not get there.' P14	A disagreement that arises and increase the odds of a negative outcome	Conflict management	Communication
'Although we try to collect as much data as possible, there are situations where the colleagues in the operating room say 'There comes a patient who has undergone a carotid endarterectomy'. But they forgot to say that the patient was very unstable.' P4	Suboptimal or miscommunication of clinical information	Handover	
'If you are humble in your search for knowledge, you can easily ask questions a younger colleague, who you think is a reference. At the beginning, we can ask all kinds of questions, however incorrect or absurd they may seem. The further forward it goes, the harder it becomes.' P2	The fear of be misunderstood	Embarrassment of clarifying doubts	
'Knowing that my actions can result in something negative for the patient is completely against my basic principle of trying my best to do my part in helping the patient to go through that process in the most serene, peaceful way possible, and ensure that everything useful and necessary for the patient's maximum benefit has been done'. P6	Consideration that nurses employ in clinical practice to weigh the risk that an action will hurt a patient against its potential to improve the clinical condition	Concern about not causing harm to the person cared for	Work ethic
'I became more awake to the situation; I almost did not leave the patient. While I saw that the physician was not seeing what I was seeing, because I was not finding it normal. While he was saying 'okay, let's see.' P7	Nursing engagement in actions that effect a desired change in any level of patient care	Advocate for the person cared for	
'There are situations where we try to intervene and there are some situations where the situation is irreversible. We must be aware of this. We cannot always be sure that this is possible.' P8	When a clinical situation is characterized by a high degree of uncertainty	The unknown/absolute uncertainty	Difficulty interpreting and predicting outcomes
'The degree of uncertainty was.I was very honest with her. I told her that the situation was very complicated and that we were doing everything in our power. She was there, in a situation where she might have to go to intensive care because of the sepsis.' P1	An unmeasurable behavior demonstrated by the patient responsive to nursing interventions	Nursing intervention outcomes	
'There are situations that touch us deeply. Young people in terminal situations, that we know that no matter how much we do, it will never be enough. That makes me very frustrated, makes me angry with life.' P7	Addressing the impact of serious illness that cannot be cured	Palliative care/end of life care	
'And trying to understand when can my subjective analysis, given the danger to the patient, find some objectivity, for example, to argue with the doctor that he was willing to send a patient away from the unit and that in the face of a certain sign of danger justifies keeping it in our care.' P6	Defining attributes, antecedents and consequences identified led to an operational definition of clinical deterioration as a dynamic state experienced by a patient	Early recognition of the potential for clinical deterioration and clinical instability factors	
'Recently there was a situation of respiratory arrest. When I arrived it was a big mess, everybody was in charge. It was chaotic. I asked the anesthesiologist who was in charge, and what was going on. there was no leadership. Afterwards, there was a division of roles, things went well, but I felt that I arrived at the right moment.' P14	Life-threatening situation where in the patient could suffer significant harm without rapid or immediate therapeutic and/or diagnostic	Precardiac arrest situations	
'We make a difference in the vigilance that we have, in the knowledge that we have in relation to the immediate post-operative period. We have a tight surveillance, and we end up making a difference because many times we are the ones in the first line and we notice the situations, the alterations that may cause some damage.' P13	Unintentional clinical problems which arise as a result of surgery and/or anesthesia	Postanesthesia complications	
'When you have a patient with a major surgery, critical, with ventilatory support, with amine support, you have to weigh it very carefully. You have to see the risk/benefit, because there is uncertainty. I am going to do complete hygiene, massage, and put the patient in a comfortable position. if I am 100% sure that I am not going to make anything worse, I will do so. Critically ill patients, I am not 100% sure.' P13	Complex and highly specialized nursing care for patients with multi-organ failure requiring complex and rapid priority management	Critical care management	

'I think this uncertainty is not talked about between us. But the fact that people do not care about certain kind of things, reveals a lot of that uncertainty. I think people react to benignly.' P10	Restriction of the rationality of optimal decision making by the cognitive limitations of the decision maker	Uncertainty perception constraint	Cognitive performance impairment
'It can be a stressful situation that leads you, in a similar situation, not wanting to act or unconsciously blocking. You can have the escape or fight. It depends on your personality, with your intrinsic factors, with what you want with your profession. Some days you are more tired, you have more shifts, you may have an external locus of control at that moment.' P13	A temporary inability to continue or complete a train of thought	Cognitive block	
'There are also these three types of nurses: those who learn to manage such a situation of uncertainty and the consequences that behavior brings, which later create new problems; and those that continue to insist and do what they think is more correct. Then there are other nurses who give up because they think that the hassle they sometimes have does not make up for the results afterwards.' P12	Unconscious neuroception	Awareness default	
'The motivation to search is not always the same. Some days yes, some days not. And more and more are prevailing the 'no' days.' P13	Lack of interest, difficulty to engage in activities, complete tasks or interact with others	Demotivation	
'It is easier to say that there is no plan, that the anesthesiologist didn't ask for blood gas. It is easier to say I didn't question what the plan is. Even in terms of positioning no action was taken. I assertively questioned the colleague, and the answer was dubious: 'this is complicated, everything is delayed'. P14	Progressive dilution or denial of responsibilities	De-responsabilization	
'I acknowledge people who do not humiliate and who share their knowledge. Those who enrich the other colleague and provide care in a pedagogical way. People who have knowledge and help us pedagogically to reduce our uncertainty. We end up feeling better by questioning these people because we feel that we are not subjected to humiliation. Instead, they help us in our acquisition of knowledge and training.' P1	Perverse and unethical practices, based on authoritarianism and power asymmetry	Moral harassment	Incivility
'I think people deal with uncertainty situations very differently, within the personality of each one. Not only in experience, not only in knowledge but it also has to do with each person's personality. There are some who, to stand out, focus their attention on the things they have done well or try to divert what they have done to put faults on the things that others have done.' P8	Violation of the person's intersubjective expectation	Disrespect for individuality	
'Some time ago, this was a sign of incompetence. You may be competent, but you are not competent in everything. Neither you, nor anyone else. There were those who knew everything and others who did not know anything.' P11	Mistrust or cast the accuracy into doubt	Professional discredit	
'There are some people who are more aggressive when detecting an error or if they cannot communicate well the most correct way to act in a given circumstance, which inhibits others from clarifying doubts. I think that moments of frank sharing, in which people can feel as equals, despite diverse knowledge, experiences, and skills, which are in fact at the same level of discussion, can only bring benefits.' P6	Moral indignation and distinction of superiority over the other	Condemnation culture	
'It has to be based on the best scientific evidence; it can not be based on individual belief. Sometimes there are people with a lot of power to make decisions, to authorize or desert certain kinds of initiatives, who base those decisions on their own beliefs and their own perceptions without involving the people at the bottom.' P6	Dysfunctional relationships that influence interpersonal functioning	Dependency/influence/conditioning relationships	
'It is facing situations where I even know and I have experience, but other colleagues do not validate my knowledge at all.' P10	Misconceptions that diminish the importance of the other's competencies	Nurses' skills misbeliefs	Core competence vagueness of post-anesthesia care unit nurses
'It is more a matter of a person not knowing what they have in institutional and organizational terms. It is more about that than the work itself.' P10	Ill-defined roles that constrain effective interprofessional collaboration	Lack of clarification of the nurse's role in the team	
'I find it surreal when anesthesiologists condition the nurses. Because there are little things that are very important, that we can do, so that when we get to the medical decision, they already have many more elements to base their decision.' P11	Dominance of the biomedical model, the active suppression of alternatives, and the corporatization of medicine-centeredness	Historical biomedical hegemony	
'We have all types of patients, with all types of pathologies, with all types of procedures. And sometimes not all of us are always prepared to meet these new challenges. Sometimes there are new procedures, done here, that we are not used to. Sometimes we do not know the material well. There are situations where we have doubts.' P8	Market news with the potential to challenge compliance in health care providers	New materials/drugs/techniques	High-tech care
'Increase training. I know this is complicated and time management has not been easy at all, but in our clinical context it is essential. And not everyone, me included, wants it. I do not want to, it is not my goal to have a lot of time off, to have training outside of work. And I think that the in-service training must be used for this. I have been in the unit for 9 years and I have never taken an advanced life support course!' P13	Poor access to best evidence and guidelines, and low nurse adherence to evidence	Asymmetric accessibility to best evidence	

'Because if you go by ABCDE, our practice is very safety-directed at the care level. A is OK, but B it is not. You must do that momentary triage, which is difficult, in a matter of seconds.' P12	Time that mediates the stimulus and the action	Scheduled situations vs urgent/emergent clinical situations	(in)Security and risk
'A patient complains of back pain after having undergone a gallbladder surgery: what is the diagnosis you make? Maybe it is referred pain. What communication am I going to have with the anesthesiologist? 'I think it is a referred pain because the innervation and the nerve fields are the same. What attitude am I going to have? I will do a massage, position the patient, which is an autonomous nursing intervention. Or I will immediately tell the doctor 'look, this is a referred pain, maybe you'd better take a painkiller right away'. P12	A rare presentation of a common condition	New or unusual situations in the clinical context	
'On an emotional level, it always has to do with cases that are more related to your life. We work with people, people have families, we have families, and there are situations that are similar to our life. 'Damn, if he were my son'. Sometimes, it is very hard emotionally.' P13	Influence of the similarities of the content of emotional experiences	Mirroring/similarity to personal experiences/emotional involvement	
'When the assessment is based on subjectivity or individuality, either of the patient or the nurse, such as pain, it is very difficult.' P12	Clinical variation on health care processes or outcomes, compared to peers or to gold standards such as evidence-based guidelines recommendation	Variability in clinical practice	
'I think that many times, it is a bit of 'guessing' and not scientific research or the search for certainties. Proven certainties, recognized and accepted by the scientific community. I think it is a bit 'I have been doing it this way for 20 years'. I think this happens a lot, quite often. More than would be desirable.' P9	Predictable labor process and no innovation ruptures, amorphous social movement	Routinization/crystallization in care delivery	
'It is important not fall in the laxity and common sense'ism.' P9	Devaluing situations, removing their absolute or independent character, and making a brief and unstructured analysis	Facilitation/relativization	
'I have changed my theoretical and practical framework many times. Science also changes. Sometimes you only realize after a few years that things had already changed before and are only being applied now.' P12	Discrepancies between practice and evidence-based practice that might compromise or be perceived to compromise the quality of care	Perpetuation of errors by outdated knowledge	
'Contact the pharmacy, try to get protocols. These alternative strategies change the result. It is the difference between doing it the right or wrong way. If a prescription raises doubts and is ambiguous, we must make sure that it is done correctly. The duration of infusion, pharmacodynamics, stability.' P2	Potential or effective patient safety threatening situations related to drug administration	Pharmacology prescription errors and near miss	
'You have a neurosurgery patient who comes in and you are settling the patient in and everything is ok. Suddenly an intracranial hemorrhage occurs, and you have no control, except in the vital parameters, blood pressure, which you can alert. Your action is fundamental. When you get to the critical part, cardiac arrest or pre cardiac arrest, if you haven't warned, haven't approached, or haven't insisted, then it is your failure. You keep showing all the critical signs and if they do not pay attention to them, you have your action limited.' P11	Retarded awareness related to signs and symptoms of surgical/anesthetic complications	Delayed diagnosis of postanesthesia complications	
'Our unit is undersized. This is problematic for the decisions making. Not only for nursing, but it also generates uncertainty for physicians and all the people who must participate in the unit management, and in this attempt to respond to those who are here and those who will come. Because everyone needs and benefits from the right time in the PACU and unfortunately and inevitably there are always shortages when supply is less than demand.'P6	Deficit between logistical, human, and technical conditions and the demand for health care	PACU overcrowding	Occupational stress
'Care management is the biggest challenge. Because the solutions sometimes fall short, and I might have to try to protect the most vulnerable nurses.' P14	Health care planning patient-centric, related to nurse workload adjustment	Care management	
'I was the oldest member of the unit at that time. I felt that, although the nurses who were with me were also already experienced, I felt that in the face of that chaos, someone had to take the reins.' P10	Leader's methods and behaviors when directing, motivating, and managing others	Leadership style	
'We are in charge of a critical ill patient and, at the same time, have to respond to another patient in an early phase of anesthesia recovery. These are variable complexities, whether in relation to the surgical procedure, the reaction to anesthesia, or the individual's condition. There are many challenges, with very different levels of complexity and demand that can generate stress and ultimately trigger uncertainty.' P6	Management skills to focus on the right tasks and ultimately deliver the expected outcomes	Priority management	
'In a certain context, which goes up to a great level of adversity, I think people manage reasonably well this insecurity and uncertainty. But sometimes that limit is exceeded. People realize that they are not working well, that they cannot comply with good practices exactly because they are working in an excessive way, insecurely, and with some degree of uncertainty. Working on the edge is never ideal. We are working on the edge, with a lot of pressure, many times.' P6	The amount of work (or load) that nursing care imposes care imposes	Workload	
'Knowledge dies if we do not share it. Unfortunately, many people, as a matter of self-protection, of the image they want to convey, end up not being able to share everything they know, everything they have experienced. Ultimately, it turns out to be harmful for the team, for the patients.' P6	The 'image' transmitted to the multidisciplinary team. The feeling of falling short of your skills and abilities	Personal feeling of control loss	