REVIEW

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The core qualities and competencies of the intensive and critical care nurse, a meta-ethnography

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Abstract

Aim: To develop a conceptual framework of the core qualities and competencies of the intensive and critical care nurse based on the experiences of intensive care patients, their relatives and the intensive and critical care nurses.

Design: Meta-ethnography.

Data sources: A comprehensive, systematic search in seven databases supplemented with hand, citation and reference search. Sources published from 2007 to 2019 were included.

Review Methods: Noblit and Hare's understanding of meta-ethnography and the work of the eMERGE project have directed the synthesis.

Results: Nineteen studies were included and synthesized into a conceptual framework. Overarching theme: 'feeling safe and being safe', subtheme: 'creating confidence and motivation' and conceptual categories (CCs): 'technical skills and biophysical knowledge'; 'inter/intra professional teamwork skills'; 'communication skills (with patients and their relatives)'; 'constant and attentive bedside presence'; 'creating participative care'; 'creating confidence through daily care'; 'creating a good atmosphere and having a supportive and encouraging attitude'; and 'building relationship to maintain self-esteem'.

Conclusion: By including the perspectives of intensive care patients, their relatives and intensive and critical care nurses, the core qualities and competencies comprise elements of both patient safety and the feeling of safety. The framework outlines concepts necessary to ensure person-centred and safe intensive care. Further research should involve each perspective to validate and strengthen the findings.

Impact: The development of standards and competence guidelines expressing the learning outcomes and qualification of intensive and critical care nurses should be based on input from intensive care patients, their relatives and intensive and critical care nurses. A variety of core qualities and competencies are necessary to create confidence and motivation, and to make the patient feel safe and be safe. This conceptual framework might form a basis for development of a program or assessment tool to facilitate excellence in education and practice in intensive care.

1 | INTRODUCTION

The World Health Organization (WHO) considers patient safety a fundamental principle of health, emphasizing how people-centred care is integrated in safe service delivery, putting the needs of people and communities at the centre of healthcare systems (WHO, 2020). This perspective has increasingly become a focus in intensive care treatment (Devlin et al., 2018; Vincent et al., 2016). The World Federation of Critical Care Nurses (WFCCN) claims that patients are susceptible to potential violations of basic human rights due to "severity, impairment of communication, and reduced decision-making capacity" (WFFCN, 2019, p. 2). WFFCN (2019, pp. 3–5) enumerates the rights of the critically ill patient: privacy and confidentiality; compassionate communication of accurate and meaningful information; protection of self and bodily integrity; available treatment, care choice and safe care; family or proxy involvement; and care from appropriately trained intensive and critical care nurses (ICCNs). However, the scope of ICCN qualities and competencies to provide people-centred and safe care to meet the rights of critically ill patients is unknown. This study aimed to develop a conceptual framework of core qualities and competencies of ICCN from the perspectives of intensive care unit (ICU) patients, their relatives and the ICCNs to contribute to safe and people-centred care, understood as person-centred healthcare (PCHC).

2 | BACKGROUND

Intensive, or critical, nursing care can be understood as care given to acutely critically ill patients and their relatives. An intensive care patient is a person with an acute, life-threatening illness, characterized by potentially reversible failure of vital organ systems (NAF/NSFLIS, 2014). The complex condition of critically ill patients requires invasive treatment, extensive medication and the use of a wide selection of technical equipment (Wassenaar et al., 2014); thus, patient safety is at risk (Farzi et al., 2017, 2018; Pronovost et al., 2008). Patient safety issues in intensive care are widely discussed (Pronovost et al., 2008; Reader et al., 2006) but lack sustainable implementation (Woodward, 2015). ICCNs' technical skills, biophysical knowledge and non-technical skills are important factors for ensuring patient safety (Alastalo et al., 2017; Kongsuwan & Locsin, 2011; Wassenaar et al., 2015).

Being safe does not always mean that patients feel safe, as endotracheal tubes make communication difficult, and severe conditions threaten privacy and self-control (Meriläinen et al., 2013; Wassenaar et al., 2014). Research aiming to improve quality of care for ICU patients has identified experiences related to communication, dependence, hope, fairness, support from relatives, trust, being cared for and presence as important (Cutler et al., 2013; Rose et al., 2014; Tsay et al., 2013). These dimensions are also described in the fundamentals of care (FOC) framework (Kitson et al., 2013), which outlines three interrelated dimensions: physical, psychosocial and relational.

There has been a paradigm shift in ICU treatment of mechanically ventilated patients from deep to lighter or no sedation (Kress et al., 2000; Strøm et al., 2010). Nevertheless, patients still describe ICU experiences as traumatizing and uncomfortable (Berntzen et al., 2018; Egerod et al., 2015; Laerkner et al., 2017). Moreover, "light" or "minimal sedation" has led to challenges in ICCN–patient interaction with patients' enhanced communicative capacity and autonomy. Relational qualities and communicative competences seem to be essential (Lind et al., 2018; Mortensen et al., 2019) to meet patients' psychosocial and relational needs (Feo et al., 2018).

Both ICCNs and relatives influence the quality of communication and help maintain relations with patients. Models aiming to define central components of the treatment and care of ICU patients and help empower clinicians and relatives sharing care of the critically ill emphasize the importance of the presence of relatives (Pun et al., 2019; Vincent et al., 2016). This confirms the value of including the perspective of patients' relatives in this study. ICU survivors are at risk of cognitive impairment (Pandharipande et al., 2013), and post-ICU anxiety has been found to be associated with memories of delusional experiences and psychiatric symptoms during ICU admission (Nikayin et al., 2016). Impairments of cognitive, psychological and physical function among ICU survivors are called post-intensive care syndrome (PICS) (Elliott et al., 2014). The mental health of relatives can also be affected, known as PICS-family (PICS-F) (Mikkelsen et al., 2019). The above-mentioned models have been developed to improve complex patient care and clinical outcomes and possibly prevent PICS for patients and their relatives (Pun et al., 2019; Vincent et al., 2016).

To provide safe care, make patients with life-threatening illness feel safe and help patients transition back to life, ICCNs need to balance and prioritize their care and interventions. Due to the high-technology environment in the ICU, Locsin's (2005) conceptual model of technological competency as caring in nursing (TCCN), which presents the relationship between technology and caring as a harmonious coexistence, is suitable.

In this study, we use the concepts of competence and core qualities to capture the person-centred position. Whereas competence was once conceptualized in terms of knowledge, skills and attitude (WHO, 2003), it has recently been expanded to also include value, experience and personal bases (Lakanmaa et al., 2012). Some argue that competence is a rather technical and professional term, not used by recipients of healthcare and therefore not person centred. McCormack and McCance (2017) use "attributes" in their person-centred framework, which aligns with "core qualities". The term "qualities" is often used in the compassionate care literature (Feo

et al., 2018). To encompass the perspectives of both patients/relatives and ICCNs, and for analytical purposes, we will use competence in this study in relation to patient safety issues (to describe technical skills and biomedical knowledge), and core qualities in relation to psychosocial and relational issues. This meta-ethnography synthesizes the perspectives of patients, their relatives and ICCNs about what constitutes essential core qualities and competencies.

3 | THE REVIEW

3.1 | Aim

The aim of this meta-ethnography was to develop a conceptual framework expressing core qualities and competencies of the ICCN by synthesizing qualitative studies aiming to explore perspectives from ICU patients, their relatives and ICCNs. Research questions are shown in Table 1.

3.2 | Design

Meta-ethnography is an interpretative method of synthesis that enables new insights from the findings from individual studies (Campbell et al., 2011) and is well suited in producing conceptual frameworks (France, Cunningham, et al., 2019). In this study, Noblit and Hare's (1988) understanding of meta-ethnography and the eMERGE project (France, Cunningham, et al., 2019) have guided the synthesis.

3.3 | Search methods

In December 2017, we conducted a comprehensive literature search in eight databases, followed by an update in November 2019. A research librarian indexed the search based on keywords informed by the three research questions (File S1). Thematic relevance was highlighted and hand, citation and reference searching were used to broaden the line of inquiry (Table 2).

3.4 | Search outcome

A total of 1948 articles were screened and 243 met the inclusion criteria based on title and abstract. Nineteen articles were included.

The selection process is presented in Figure 1, while the characteristics of the included articles are summarized in Table 3.

3.5 | Quality appraisal

Eligible articles counted 22 and they were assessed using the Critical Appraisal Skills Programme (CASP, 2018), three articles were excluded due to the lack of a clear statement of the aims of the research. KFH and ST assessed the articles independently, and consensus was reached through discussion (File S2). Because meta-ethnography is interpretive, it was important to have conceptually rich and diverse texts (France, Cunningham, et al., 2019). Therefore, the whole team discussed how the papers answered the research questions before the CASP appraisal (Booth, 2018). The majority of the included articles had weaknesses with regard to adequate consideration of the relationship between researcher and participants (CASP, 2018, p. 4). The data analysis lacked a clear description in six of the 19 articles (CASP, 2018, p. 5), thus assessing precision of the data analysis was challenging. Nevertheless, we found the 19 included articles valuable as the results answered the study's research questions.

3.6 | Data abstraction

The methodology literature and seminal meta-ethnography papers used slightly different terminology (Campbell et al., 2011; France, Cunningham, et al., 2019; France, Uny, et al., 2019; Garside et al., 2008; Malpass et al., 2009; Toye et al., 2013). Our understanding of the terminology is presented in Table 4.

The seven phases of the interpretative method of meta-ethnography (Noblit & Hare, 1988) were followed (Table 5).

Two of the authors (KFH and ST) read the included articles repeatedly and extracted data by looking for conceptually rich constructs in line with the aim and research questions (phase 3) (France et al., 2014). Concepts were identified in the results, discussion and conclusion sections (Malterud, 2017). The same authors discussed each article's relevance in terms of context, theoretical framework and design and decided which concepts should form the basis of this meta-synthesis. To assess the level of interpretation, we used Schütz's (1964) concept of first-, second- and third-order constructs which correspond to the research participants' views, the authors' views and the view of the research team respectively (Malpass et al., 2009).

TABLE 1 Research questions

1	Which core qualities and competencies of ICCNs do ICU patients find important?
2	Which core qualities and competencies of ICCNs do relatives of ICU patients find important?
3	Which core qualities and competencies do ICCNs find important in their daily work with critically ill patients?

Abbreviations: ICCN, intensive and critical care nurse; ICU, intensive care unit.

TABLE 2 Inclusion and exclusion criteria

Inclusion	Exclusion
Articles published from 2007 (due to the paradigm shift) to 2019[a]	Articles published before 2008[a]
Empirical research articles published in scientific journals	Editorials, reports, book chapters
Peer-reviewed articles	Articles using quantitative or mixed-methods[b]
Articles using qualitative methods[b]	Articles focusing on children and newborns
English language	Non-English language
Articles focusing on adults	Thematic, focusing on specific issues, e.g., end-of-life care, delirium, sedation etc.
Thematic, answering the research questions	

[a]After the updated search, the cut-off year was changed from 2007 to 2008.

[b]Articles using mixed-method design were excluded after the updated search.
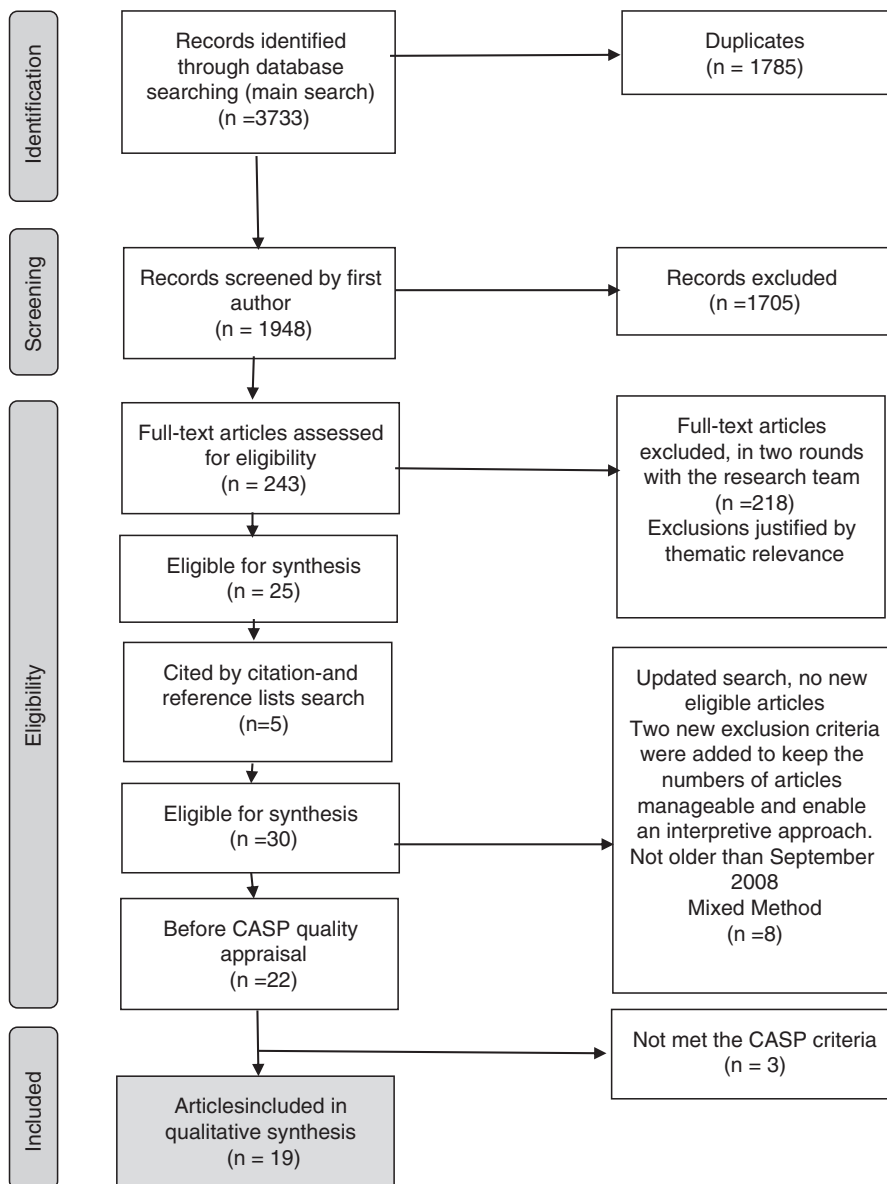

FIGURE 1 PRISMA flow diagram of inclusion procedure (Moher et al., 2009)

All authors juxtaposed the concepts by categories, independently of perspectives, and labelled each category (phase 4) (Garside et al., 2008; Malpass et al., 2009). In an effort to preserve their context and meaning, the concepts were presented in their original text and labelled according to perspective, giving us a clear indication of similarities and differences between the perspectives (Bridges et al., 2013). The four perspectives—ICU patients, relatives of ICU patients, ICCNs and ICU patients and their relatives—were separated and translated and synthesized independently before being drawn together into a final line of argument synthesis. The juxtaposed

TABLE 3 Authors' summary characteristics of the included articles, all perspectives[a]

Authors, year, country	Aim	Sample and setting	Methodology
Perspective of ICU patient			
Wåhlin et al. (2009)[b] Sweden	To compare ICU patient experiences of empowerment with next of kin and staff beliefs	11 former ICU patients, 3–30 days post ICU, 3 days of more in ICU 12 relatives, 1–60 days post ICU, their next of kin was in ICU for 1–21 days 12 staff, minimum 2 years ICU practice (nurses and physicians)	Individual interviews Qualitative content analysis
Karlsson, Lindahl, et al. (2012a) Sweden	To describe patients' statements and experiences concerning receiving mechanical ventilation	14 ICU patients, video recorded while mechanical ventilated, between 2 and 12 days after arrival. MAAS score 3–4	Video recorded interviews Qualitative and quantitative content analysis and hermeneutic analysis
Alpers et al. (2012) Norway	To gain knowledge on what factors contribute to inner strength in ICU patients	6 former ICU patients, 3–6 months post ICU, minimum 48 h mechanical ventilated	Individual interviews Hermeneutic analysis
Karlsson, Bergbom, et al. (2012b) Sweden	To illuminate the lived experience of patients who were conscious during mechanical ventilation in an intensive care unit (ICU)	12 former ICU patients, 1 week post ICU (follow-up interview after having been videorecorded)	Individual interviews Phenomenological-hermeneutic analysis
Lykkegaard and Delmar (2015) Denmark	To explore the perceived meaning of dependency on care as experienced by intensive care patients	3 former ICU patients, 6–12 months post ICU, minimum 1 week mechanical ventilated	Individual interviews Phenomenological-hermeneutic analysis
Stayt et al. (2015) UK	To investigate patients' experiences of technology in an adult intensive care unit	19 former ICU patients, 12 weeks post ICU	Individual interviews Phenomenological analysis
Klavestad Moen and Nåden (2015) Norway	To acquire knowledge of what contributes to maintaining and promoting the dignity of intensive care patients	7 former ICU patients, at least 5 days of ICU stay over the past year	Individual interviews Phenomenological analysis
Lindberg et al. (2015) Sweden	To describe and elucidate patient experiences of autonomy in an intensive care context from a caring perspective	11 former ICU patients, 1–7 weeks post ICU.	Individual interviews Qualitative content analysis
Mylén et al. (2016) Sweden	To explore the lived experiences of conscious patients in neurosurgical intensive care	11 former ICU patients, 2–14 months post ICU, more than 5 days in ICU. Not mechanical ventilated	Individual interviews Phenomenological approach
Perspective of the ICCN			
Kongsuwan and Locsin (2011) Thailand	To describe the meaning of the experience of Thai nurses *caring for* persons with life-sustaining technologies in intensive care settings	8 professional nurses with ICU experience, no other specifications	Individual interviews Hermeneutic-phenomenological analysis
Tunlind et al. (2015) Sweden	To describe critical care nurses' experiences of performing nursing care in a high technology healthcare environment	8 ICCNs with minimum of 2 years of ICU practice	Individual interviews Qualitative content analysis
Kvande et al. (2015) Norway	To explore the phenomenon of becoming aware of incipient changes in patient condition	11 ICCNs with a minimum of 5 years of ICU practice	Observations and Individual interviews Hermeneutic-phenomenological analysis
Wassenaar et al. (2015) The Netherlands	To describe and understand intensive care unit (ICU) nurses' views about their role in ICU patients' perception of safety	13 ICCNs, no specifications	Individual interviews Grounded theory

(Continues)

TABLE 3 (Continued)

Authors, year, country	Aim	Sample and setting	Methodology
Kvande et al. (2017) Norway	To explore the phenomenon of assessing changes in patients' conditions in intensive care units	11 ICCNS with a minimum of 5 years of ICU practice	Observations and Individual interviews Hermeneutic-phenomenological analysis
Alastalo et al. (2017) Finland	To provide a comprehensive description of multiple skills in patient observation in critical care nursing	20 ICCNs, minimum 5 years of ICU practice. (Finland has no specializing education in critical care nursing)	Individual interviews Thematic analysis
Perspective of relatives of the ICU patent			
McKiernan and McCarthy (2010) Ireland	To describe the lived experience of relatives of patients in the intensive care unit	Six relatives, 3–5 days from admission ICU	Individual interviews Phenomenological analysis
Blom et al. (2013) Sweden	To explore participation and support as experienced by close relatives of patients at an intensive care unit (ICU)	Seven relatives, their close relative had stayed from 4 to 14 days. Interviews during the stay	Individual interviews Phenomenological analysis
Wong et al. (2015) Australia	To explore families of critically ill patients' experiences of their interactions with staff, their environment, the patient and other families	12 relatives, 2–3 days from admission ICU	Individual interviews Grounded Theory
Perspective of ICU patients and their relatives			
Gill et al. (2013)[c] Australia	To explore critical care patients' and families, experiences and seek their input into nurses' postgraduate educational preparation and practice	8 ICU patients, 9 relatives, recruited via health consumer organization. Big variety of days in ICU	Three exploratory focus groups and five individual interviews Thematic analysis

Abbreviations: ICU, intensive care unit; MAAS, Motor Activity Assessment scale.

[a]Perspective of ICU patients ($n = 8$), perspective of ICCNs ($n = 6$), perspective of relatives of the ICU patient ($n = 3$), perspective of the ICU patient and their relatives (inseparable) ($n = 1$), all the three perspectives (separable).

[b]AI three perspectives, summary characteristics presented in first section (perspective of ICU patients).

[c]The findings of this article and those of the articles representing relatives are presented together in the result section.

TABLE 4 Our understanding of terms

Concept	Data extractions from the primary studies: also called ideas, metaphors and phrases (Noblit & Hare); first- and second-order constructs
Label	Grouped, juxtaposed concepts in categories (a way of organizing the concepts before translation and synthesis)
Key concept	The translations of the juxtaposed concepts; idiomatic translations in own words
Conceptual category	The synthesis of the key concepts; third-order constructs

concepts and contextual data were placed in tables representing each group. An example is shown in Table 6. Settings, methodologies and theoretical frameworks varied in the articles, but were evaluated as commensurable and valuable for a meta-ethnography.

The oldest article representing all three perspectives (Wåhlin et al., 2009) became the "index" article for each perspective, except for the single article representing the patient and relative perspective (Gill et al., 2013). Each perspective was represented in a table and formed the starting point when conducting the reciprocal (comparing related concepts) and refutational (discussing opposites and/or inconsistencies) translation process (phase 5) (Noblit &

Hare, 1988). The reciprocal translation was performed according to Campbell et al. (2011); the concepts from paper 1 were compared with those from paper 2, then paper 3 and so on; concepts were grouped under working labels. This process was iterative, moving back and forth between concepts, primary articles and the working labels. The labels used to organize the concepts did not express third-order constructs. Labels were merged, reducing the number of categories; some concepts were moved to other categories, while some acquired more text to provide more details; new concepts were found, and some existing concepts were deleted because they turned out to be irrelevant. The decisions at this stage were achieved

TABLE 5 Seven phases of meta-ethnography (Noblit & Hare, 1988)

Phase 1	Getting started, topic selection
Phase 2	Deciding what is relevant to the initial interest, selecting and finding studies
Phase 3	Reading the studies
Phase 4	Determining how the studies are related
Phase 5	Translating the studies into one another
Phase 6	Synthesizing translations
Phase 7	Expressing the synthesis

through consensus in the research group and finally led to translation of the concepts to key concepts in each label (Figures 2 and 3). No concepts were identified as directly refutational in the perspectives, but some inconsistencies across the perspectives were identified and marked. These deviations are cited in context in the discussion. Discussing differences can lead to new understandings (Campbell et al., 2011; France, Uny, et al., 2019; Noblit & Hare, 1988) and help close the gap between the different perspectives and thereby support a new storyline (Finfgeld-Connett, 2014).

3.7 | Synthesis

The translations of each perspective were synthesized and a line of argument was produced before synthesizing across the groups (phase 6) (France, Cunningham, et al., 2019).

After synthesizing the translations into CCs, we discussed how the CCs were related, drawing arrows between them (Figure 4), and performed a line of argument synthesis (Atkins et al., 2008), thus providing a new storyline for the findings of all the included papers in each perspective (France, Uny, et al., 2019).

To synthesize across perspectives, we started by getting an overview of each perspective's CCs and key concepts. This overview formed the basis of a synthesis leading to either a confirmation or a change/modification of the CC. In line with France, Cunningham, et al. (2019), the process of synthesis of the key concepts and the line of argument is visualized in figures to explain the interrelationship of the data and interpretations of the authors (Figure 5) (File S3) (Figure 6).

4 | RESULTS

4.1 | Conceptual categories for each perspective

To make patients feel safe and ensure patient safety in the ICU, ICCNs have to create confidence through a number of core qualities and competencies, described below (Table 7).

These CCs are quite similar for each perspective, but there are differences when it comes to which categories the groups emphasize, thus leading to different new storylines (Table 8).

4.2 | Conceptual categories across perspectives (core qualities and competencies of ICCNs)

Some CCs express subtle nuances of the same theme and as such are not mutually exclusive and must be understood in the context of the associated category.

4.2.1 | Technical skills and biophysical knowledge

Technical skills and biophysical knowledge were competencies highlighted by ICCNs. Medical and technical tasks should be performed reliably and accurately, and operational principles should be understood to prevent and detect complications (Alastalo et al., 2017; Kongsuwan & Locsin, 2011; Kvande et al., 2015, 2017; Tunlind et al., 2015; Wåhlin et al., 2009, p. 102).

> When the patients need life-sustaining technology, we must care for them as best we can. We have to monitor the [patient] changes all the time. We have to know the mode of ventilatory care the patient receives – does the patient depend on it 100% or not? We have to care for the technology by checking the parts. ICCN (Kongsuwan & Locsin, 2011, p. 105).

Fostering tolerance of the technological environment and simultaneously showing understanding of the patients' situation were described as important, and required technological competence, biophysical knowledge and analytical thinking (Alastalo et al., 2017; Kvande et al., 2015, 2017; Tunlind et al., 2015). The patients also described technical skills and biophysical knowledge as essential. To understand each patient's complex condition and handle the equipment in a safe way to build a trusting relationship (Karlsson et al., 2012; Stayt et al., 2015; Wåhlin et al., 2009). "(...) technology and care appeared to be inseparable" (Stayt et al., 2015, p. 2055). For the relatives to feel confident, knowledgeable information were described as necessary (Blom et al., 2013).

4.2.2 | Inter/intra-professional teamwork skills

ICCNs described teamwork skills, including exchanging information and observations and sharing responsibilities to achieve mutual goals for the patients and their families, as a core quality (Alastalo et al., 2017; Tunlind et al., 2015). Patients and relatives emphasized mutual understanding, interplay and consensus among staff as important teamwork skills. Consistency of information was emphasized by all three perspectives (Blom et al., 2013; Gill et al., 2013; Lindberg et al., 2015; Wassenaar et al., 2015; Wong et al., 2015).

> It is very important that policy is unambiguous and that also things are discussed unambiguously with the patient. (...) inconsistent information gives the patients

TABLE 6 An example of juxtaposed concepts, ICU patient perspective (the original table included contextual data)

Label	Concept	Concept	Concept	Concept
Building a respectful relation to maintain self-esteem	A[a] (1)[b] strengthened in his/her self-esteem when recognized by staff they had met before (1) Patients' self-esteem also increased when they received positive feedback from staff (1) Conversely, self-esteem decreased when a patient felt helpless, exposed and completely dependent on others (1) to be treated respectfully, be listened to and to have their wishes and needs satisfied	a (3) to see the patient as a person are also important for promoting inner strength (3) "tacit relationship'" aimed at reducing worries, discomforts and suffering, through touch	a (4) the patients should feel free to decide to what extent they want to participate, if at all. Providing this choice is a way for the nurse to confirm the patient's dignity as an equal and important human being. (4) quality of the relationship was critical and prerequisite for communication (4) patients had to endure unpleasant encounters with staff whom they experienced as disrespectful and lacking in trust	a (5) When the relationship to the staff is good, participants perceived being dependent as easier. Participants state that it seems to be of major importance that the relationship to the nurse is personal. It gives a sense of security and community. (5) The violation occurs when body and person are separated and the experience of integrity seems to beat stake

Abbreviation: ICU, intensive care unit.

[a]Block letter used to illustrate the index paper.

[b]Numbers used to identify the paper.

very little trust, like do they know what they are doing here? ICCN (Wassenaar et al., 2015, p. 3239).

A good atmosphere in the professional team, the ability to solve conflicts and awareness of the impact of own behaviour were also described as important by patients and their relatives (Gill et al., 2013).

4.2.3 | Communication skills

Everyone said that information should be honest, repeated, open, continuous, consistent and effective (Blom et al., 2013; Karlsson et al., 2012; Lindberg et al., 2015; Wåhlin et al., 2009; Wassenaar et al., 2015; Wong et al., 2015).

You could tell they were telling you the truth (…) they weren't sugar-coating it for you (…) they were telling you everything, so you felt you could trust them, because they weren't keeping stuff from you. Relative (Wong et al., 2015, p. 58).

Patients and relatives stressed the importance of a personal and sensitive approach, and listening to and understanding the patient's attempts to communicate. Checking whether the patient and their relatives understood is another important issue (Gill et al., 2013; Karlsson, Bergbom, et al., 2012; Karlsson, Lindahl, et al., 2012; Mylén et al., 2016). Relatives highlighted the use of lay terms and a friendly approach (McKiernan & McCarthy, 2010; Wong et al., 2015). Knowledge about how to communicate with intubated patients and how to help relatives and patients find a way to communicate with each other were emphasized, as patients' communication skills are limited:

(…)you lose the ability to indicate your needs and that's the basic part of being a human. Patient (Gill et al., 2013, p. 99).

An inconsistency was found between the ICCNs and the patients/relatives as ICCNs' preferred keeping their information short and limited, while the patients and their relatives wanted comprehensive information (Wåhlin et al., 2009; Wassenaar et al., 2015).

4.2.4 | Constant and attentive bedside presence

The complex physical and psychological condition of ICU patients requires constant and intense awareness from ICCNs. Assessing changes in a patient's condition implies sensitivity and attentiveness (Gill et al., 2013; Kvande et al., 2015, 2017). Being bedside meant that patient's needs were visible and the ICCNs were able to give help quickly (Gill et al., 2013; Karlsson, Bergbom, et al., 2012; Karlsson, Lindahl, et al., 2012; Kvande et al., 2015, 2017; Lykkegaard & Delmar, 2015; McKiernan & McCarthy, 2010; Stayt et al., 2015; Wåhlin et al., 2009; Wong et al., 2015). According to one patient, bedside presence also might "minimize the invasive and isolating potential of technology" (Stayt et al., 2015, p. 2052). The presence had to be attentive, as the following patient testimony underline:

Even though they were no further away than the corner of the room, I still felt very alone (…) I've never been surrounded by so many people and felt so alone. I've never had so much attention yet felt so neglected. Patient (Stayt et al., 2015, p. 2056).

Concept	Concept	Concept	Concept
a	a	a	a
(6) Caring activities were going on around them but not necessarily to them or with them. (6) impersonal care where healthcare professionals appeared to be more interested in the technologies surrounding them (6) This lack of memory of human contact and perception of 'faceless' care exemplifies the notion that healthcare practitioner may become an extension of technology	(7) When nursing staff spent some time surveying the patients' wishes and needs, patients had a good experience. They felt that their individual needs were taken care of and that their views on the care were heard. (7) felt that the nursing staff had seen them and became acquainted with them	(8) The attitude of the staff caused the ICU patients to feel confirmed and sometimes unique. They wanted to be cared for as individuals, including the need to be noticed. (8) They also wanted to be asked for their opinion, as being consulted helped them to participate in nursing care decisions	(9) interpersonal conversation between staff and patient confirmed the patient as a human being (9) When the patients' emotional, physical and psychological needs were attended to and satisfied by the ICU staff, they felt that their wishes/needs were taken seriously.

Constant, attentive presence—being with someone, being touched and talked to—was experienced as comforting:

> You have no idea how nice this is(…)because when you have this nightmare(…)in all of this(…) and then wake up with someone holding your hand and patting you(…)ah it is(…)is beyond words. Patient (Mylén et al., 2016, p. 45).

4.2.5 | Creating partnership in care

All three perspectives emphasized that inclusivity, involving patients and relatives in care, represents an important core quality. Dialogue, conversation and information were seen as fundamental conditions for partnership (Alastalo et al., 2017; Wassenaar et al., 2015).

> That you involve someone briefly in the conversation. (…)Explain what you tell his wife. (…) Because these people totally lost control of everything. And I think they then at least have the idea "I have quite a bit of control over how it goes." ICCN (Wassenaar et al., 2015, p. 3238).

Patients and relatives appreciated being part of the team, and interaction between staff and relatives strengthened the patient's confidence (Karlsson, Bergbom, et al., 2012; Lindberg et al., 2015; Mylén et al., 2016; Stayt et al., 2015; Wåhlin et al., 2009).

> It promotes dignity(…) to be praised for what little you can do. Even if it's not much, it can help your

confidence. Because my confidence wasn't sky-high, to put it like that(…)I felt small and helpless, I really did. Patient (Klavestad Moen & Nåden, 2015, p. 290).

Patients described companionship and fellowship with ICCNs as vital to the process of getting better and regaining control (Karlsson, Lindahl, et al., 2012) and helpful in accepting technology as a necessity (Kongsuwan & Locsin, 2011). Not all patients wanted relatives to participate or to be present, and individual needs must be considered (Alpers et al., 2012).

When relatives' presence provided comfort and made information understandable, encouraging them to contribute was important. ICCNs should support and invite relatives' participation and offer comprehensive information (Blom et al., 2013; Gill et al., 2013).

4.2.6 | Creating confidence through daily care

ICU patients, relatives and ICCNs all emphasized that ICCNs should demonstrate their competence and expertise through daily care to create confidence. ICCNs highlighted vigorous, confident and appropriate action (Wassenaar et al., 2015), while patients believed that competence was shown by how the ICCNs talked, touched and helped them in daily care (Alpers et al., 2012; Karlsson, Bergbom, et al., 2012; Mylén et al., 2016; Wåhlin et al., 2009). Relatives stressed the importance of receiving support and continuous information throughout the day (Blom et al., 2013). ICCNs stated the importance of foresight and sensitive awareness of incipient changes in daily care (Kvande et al., 2015, 2017).

> I always start the shift by going to the patient and greeting the patient. This gives me a response

Label: Creating a good atmosphere and having a supportive and encouraging attitude

Concepts, meaning highlighted:

(1) chilly and unengaged
(1) A relationship was experienced as nourishing when it including human warmth, commitment and mutuality.
(1) not feel like just a patient but more like a member of the team. This could be experienced when involved in an amusing chat, sharing private experiences with staff or feeling fellowship, often expressed as harmonized chemistry, with a staff member
(1) peaceful environment, which even included staff's behavior and tone of voice as well as time allowed for rest
(1) Patients experienced joy and humoras valuable ingredients in a positive atmosphere
(1) Human warmth and a caring spirit, whereby staff showed consideration and cared for patients as well as next of kin and each other
(2) they felt cared for by the nurses especially when they were sharing jokes with them
(3) nice, kind, gentle and helpful, showing interest in the patient 's individual needs and life
(4) 'Standing by' is essential in stimulating patients to use their inner strength to fight for survival and regain independence.
(5) to feel the nurse's consideration and to receive the care, which goes beyond what is necessary
(5) Patients gave reports of care where the nurse is experienced as cold and indifferent. The nurse is superficial and heavy-handed
(6) This level of compassionate care may potentially provide therapeutic benefits that extend beyond maintaining patients' physical needs, by providing emotional and psychological comfort
(6) providing personal hygiene and emotional support…particularly comforting and meaningful
(7) make use of humor about the caring situation
(7) approached them judiciously, not doing things without asking first
(7) nurses did not show any negative signalsduring caregiving
(7) Good dialogue between the staff and the patients was highlighted as part of dignified care.
(7) Some of the participants greatly appreciated the use of humor.
(7) Some of the participants greatly appreciated the use of humor
(7) Condescending attitudes…lack of involvement…a factor of demoting dignity
(7) genuinely concerned with the patients and the treatment of them
(8) insulting, impersonal treatment. The patients found the atmosphere inviting, as if they existed in a 'philosophy of care', characterized by mutualunderstanding, interplay and consensus among staff, whichhelped facilitate their move towards autonomy.

FIGURE 2 An example of a map before translating concepts, ICU patient perspective. Abbreviation: ICU, intensive care unit

Label: Creating a good atmosphere and having a supportive and encouraging attitude
Attitude: Showing genuinely concern with human warmth, commitment and mutuality (1, 3, 5, 6, 7, 8)
Atmosphere: Involving patients in the team, amusing chat, sharing private experiences/ small talk (1, 7, 8)
Atmosphere: Joy and humor are valuable ingredients in a positive atmosphere as well as a peaceful environment (1, 2, 7)
Support: 'Standing by', encourage patients to fight for survival (4, 6, 7)

FIGURE 3 An example of a map with key concepts, ICU patient perspective. Abbreviation: ICU, intensive care unit

or no response and can tell me a little about the patient's wakefulness. I look at the bedside monitors while I am touching the patient. Is the patient's skin dry, hot, sweaty, cold, or clammy? Is the patient restless? ICCN (Kvande et al., 2017, p. 102).

ICCNs also stressed the importance of building trust through good and comfortable care. Patients expressed how the "little extras" at the right time could be of great importance and give them self-confidence:

I reacted very positively when one of these ICCNs said that we're going to wash your hair(...)She just saw
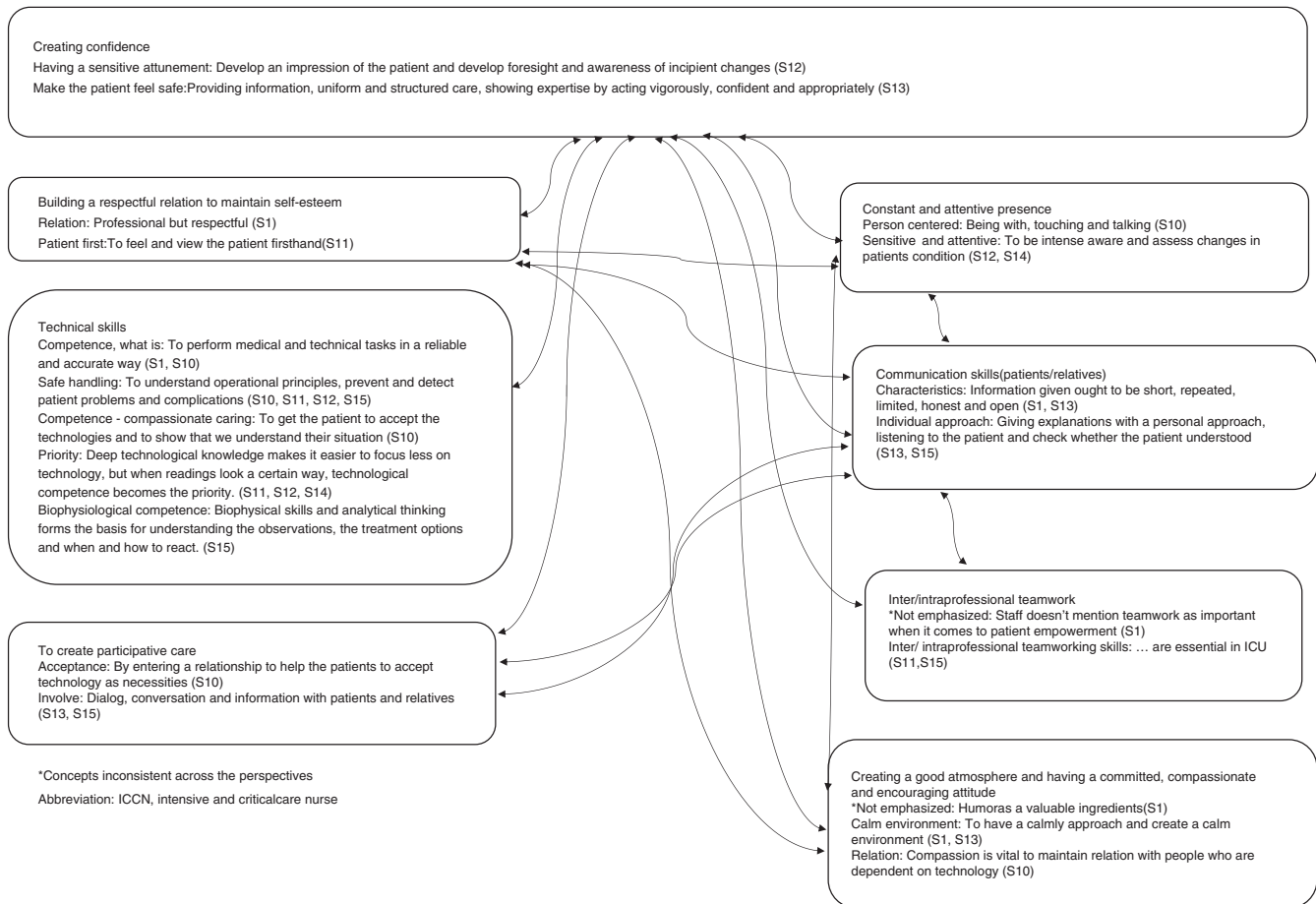
Creating confidence
Having a sensitive attunement: Develop an impression of the patient and develop foresight and awareness of incipient changes (S12)
Make the patient feel safe:Providing information, uniform and structured care, showing expertise by acting vigorously, confident and appropriately (S13)

Building a respectful relation to maintain self-esteem
Relation: Professional but respectful (S1)
Patient first:To feel and view the patient firsthand(S11)

Technical skills
Competence, what is: To perform medical and technical tasks in a reliable and accurate way (S1, S10)
Safe handling: To understand operational principles, prevent and detect patient problems and complications (S10, S11, S12, S15)
Competence - compassionate caring: To get the patient to accept the technologies and to show that we understand their situation (S10)
Priority: Deep technological knowledge makes it easier to focus less on technology, but when readings look a certain way, technological competence becomes the priority. (S11, S12, S14)
Biophysiological competence: Biophysical skills and analytical thinking forms the basis for understanding the observations, the treatment options and when and how to react. (S15)

To create participative care
Acceptance: By entering a relationship to help the patients to accept technology as necessities (S10)
Involve: Dialog, conversation and information with patients and relatives (S13, S15)

*Concepts inconsistent across the perspectives

Abbreviation: ICCN, intensive and criticalcare nurse

Constant and attentive presence
Person centered: Being with, touching and talking (S10)
Sensitive and attentive: To be intense aware and assess changes in patients condition (S12, S14)

Communication skills(patients/relatives)
Characteristics: Information given ought to be short, repeated, limited, honest and open (S1, S13)
Individual approach: Giving explanations with a personal approach, listening to the patient and check whether the patient understood (S13, S15)

Inter/intraprofessional teamwork
*Not emphasized: Staff doesn't mention teamwork as important when it comes to patient empowerment (S1)
Inter/ intraprofessional teamworking skills: … are essential in ICU (S11,S15)

Creating a good atmosphere and having a committed, compassionate and encouraging attitude
*Not emphasized: Humoras a valuable ingredients(S1)
Calm environment: To have a calmly approach and create a calm environment (S1, S13)
Relation: Compassion is vital to maintain relation with people who are dependent on technology (S10)

FIGURE 4 Synthesis of ICCN perspectives

and understood(…) I liked her very much after that. Patient (Klavestad Moen & Nåden, 2015, p. 288).

Patients and relatives appreciated ICCNs' compassion and provision of socio-emotional support while providing physical care (Gill et al., 2013).

4.2.7 | Creating a good atmosphere by having a supportive and encouraging attitude

Patients and relatives valued human warmth, compassion, soft handedness and empathy rather than a strictly clinical manner in ICCNs (Alpers et al., 2012; Gill et al., 2013; Karlsson, Lindahl, et al., 2012; Klavestad Moen & Nåden, 2015; Lindberg et al., 2015; Lykkegaard & Delmar, 2015; McKiernan & McCarthy, 2010; Stayt et al., 2015; Wong et al., 2015). ICCNs wanted to have a gentle approach and create a calm environment (Wåhlin et al., 2009; Wassenaar et al., 2015). Patients thought it was important for ICCNs to create a good atmosphere, including involving patients, encouraging mutuality, using humour, chatting and sharing private experiences (Klavestad Moen & Nåden, 2015; Lindberg et al., 2015; Wåhlin et al., 2009).

(…)to talk about something else(…)than babbling about medication//(…)It was like a mental trip. Patient (Mylén et al., 2016, p. 45).

Relatives highlighted the importance of ICCNs downplaying the seriousness of the situation by talking about general things, although having the right amount of self-disclosure and humour was important (Blom et al., 2013; Gill et al., 2013; McKiernan & McCarthy, 2010).

Relatives also described that an atmosphere of courage and security can enable ICCNs to coach and push (or pull) patients to have confidence in their own ability, thereby providing hope (Alpers et al., 2012; Karlsson, Lindahl, et al., 2012; Lindberg et al., 2015; McKiernan & McCarthy, 2010; Stayt et al., 2015).

They were so good at it, trying all the time to push me(…)To see if I could move myself a little bit in bed(…)It was a step forward every time you managed (…)Then you grew(…) this went really well. Patient (Lindberg et al., 2015, p. 299).

Both patients and relatives stressed the importance of commitment and genuine concern from ICCNs (Alpers et al., 2012; Klavestad Moen & Nåden, 2015; Lindberg et al., 2015; Lykkegaard & Delmar,
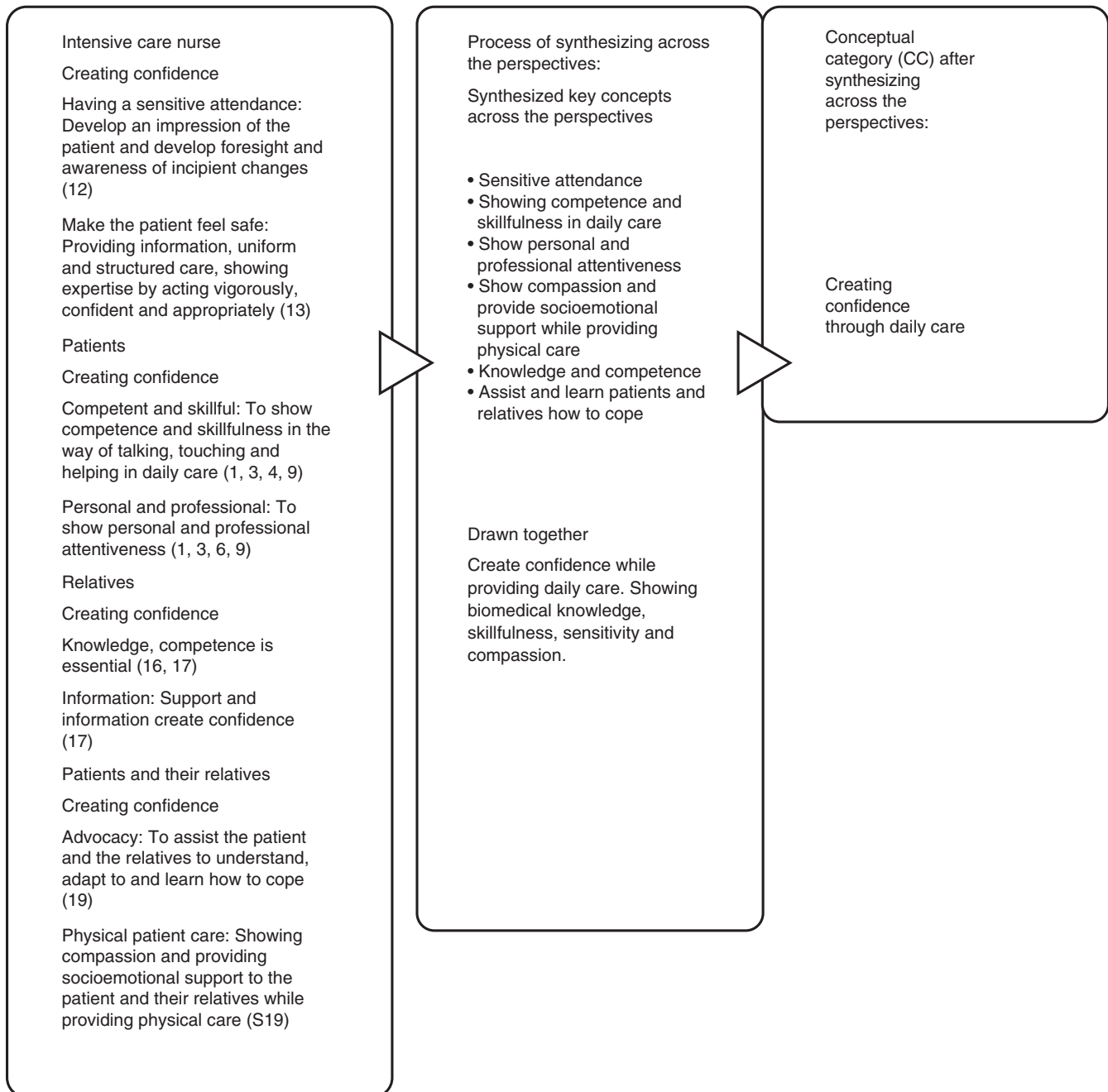
Intensive care nurse

Creating confidence

Having a sensitive attendance: Develop an impression of the patient and develop foresight and awareness of incipient changes (12)

Make the patient feel safe: Providing information, uniform and structured care, showing expertise by acting vigorously, confident and appropriately (13)

Patients

Creating confidence

Competent and skillful: To show competence and skillfulness in the way of talking, touching and helping in daily care (1, 3, 4, 9)

Personal and professional: To show personal and professional attentiveness (1, 3, 6, 9)

Relatives

Creating confidence

Knowledge, competence is essential (16, 17)

Information: Support and information create confidence (17)

Patients and their relatives

Creating confidence

Advocacy: To assist the patient and the relatives to understand, adapt to and learn how to cope (19)

Physical patient care: Showing compassion and providing socioemotional support to the patient and their relatives while providing physical care (S19)

Process of synthesizing across the perspectives:

Synthesized key concepts across the perspectives

- Sensitive attendance
- Showing competence and skillfulness in daily care
- Show personal and professional attentiveness
- Show compassion and provide socioemotional support while providing physical care
- Knowledge and competence
- Assist and learn patients and relatives how to cope

Drawn together

Create confidence while providing daily care. Showing biomedical knowledge, skillfulness, sensitivity and compassion.

Conceptual category (CC) after synthesizing across the perspectives:

Creating confidence through daily care

FIGURE 5 The process of synthesis across perspectives (ex. "creating confidence")

2015; McKiernan & McCarthy, 2010; Stayt et al., 2015; Wåhlin et al., 2009; Wong et al., 2015).

4.2.8 | Building relationships to maintain self-esteem

Patients and ICCNs emphasized the importance of respectful relationships. While ICCNs wanted a "professional but respectful relationship" (Wåhlin et al., 2009, p. 338) and to "feel and view the patient firsthand" (Tunlind et al., 2015, p. 120), patients wanted a friendly, mutual relationship (Klavestad Moen & Nåden, 2015;

Lykkegaard & Delmar, 2015; Wåhlin et al., 2009). ICU patients and their relatives highlighted person-centred care, where patients are seen as persons with emotional, physical and psychological needs and wishes (Alpers et al., 2012; Blom et al., 2013; Gill et al., 2013; Klavestad Moen & Nåden, 2015; Lindberg et al., 2015; McKiernan & McCarthy, 2010; Mylén et al., 2016; Wåhlin et al., 2009). Caring activities should be performed with dignity on or with patients, not around them (Lykkegaard & Delmar, 2015; Stayt et al., 2015).

> It was very transgressive when they touched me all the time. A lot of different people. No one, or maybe they did, but I didn't feel that anybody considered me

TABLE 7 Conceptual categories expressing core qualities and competencies of the ICCN

Conceptual categories
Technical skills and biophysical knowledge
Inter/intra-professional teamwork skills
Communication skills (with patients and their relatives)
Constant and attentive bedside presence
Creating participative care
Creating confidence through daily care
Creating a good atmosphere and having a supportive and encouraging attitude
Building relationship to maintain self-esteem

Abbreviation: ICCN, intensive and critical care nurse.

TABLE 8 The line of argument synthesis expressed as new storylines for each perspective

ICU patients emphasized relational qualities, such as a respectful attitude, the ability to create a good atmosphere, professional and personal availability and an inclusive appearance; being understood was important, while teamwork and technical skills were less so
Relatives of ICU patients emphasized a compassionate attitude, and the ability to balance self-disclosure and humour and make patients feel like persons. ICCNs should have communicative skills; a constant, attentive presence; an inclusive appearance; and a positive impact on the team around the patient. The relatives did not mention technical skills explicitly, but being competent and skilled was considered essential
ICCNs highlighted patient safety issues, technical skills, biophysical knowledge, and constant, attentive presence. Participative care was described as central, and informative and personal communication with patients and their relatives were reported as important, with information weighted more than involvement. The ICCNs stressed the importance of inter/intra-professional teamwork. Relational qualities described as desirable were calmness, compassion and commitment, but also professionalism

Abbreviations: ICCN, intensive care nurses; ICU, intensive care unit.

as a person. It was just a body lying there that they had to get going again. And that was also fine because it meant that I survived but… Patient (Lykkegaard & Delmar, 2015, p. 5).

To build a relationship and maintain the patient's self-esteem, ICCNs had to have enough situational and emotional awareness to sense their needs (Kvande et al., 2017; Lindberg et al., 2015; Wåhlin et al., 2009).

4.3 | Line of argument synthesis

The line of argument synthesis yielded an overarching theme and a subtheme, which were common to all the perspectives and the synthesis of the perspectives. The theme "feeling safe"—ensure patient safety and "being safe"—ensure patients' feeling of safety, and the

subtheme *creating confidence and motivation*. All the qualities and competencies described as conceptual categories are identified as necessary to create confidence and motivation and are thus connected. Constant development and enhancement of these qualities and competencies will support the goals of making patients feel safe and ensuring their safety. The conceptual framework (Figure 6) (File S4) illustrates that some qualities and competencies influence patients' feelings of safety, while others more directly ensure their safety. However, the two effects are not mutually exclusive.

5 | DISCUSSION

The objective of this meta-ethnography was to develop a conceptual framework of core qualities and competences for ICCNs aiming for patient safety and person-centeredness in the ICU. Including the perspectives of patients and their families was, thus, essential and provided insight into the phenomenon of feeling safe. This study reveals a range of core qualities and competences ICCNs need to instil confidence and motivation and to make patients and their relatives feel safe and be safe.

Every CC has elements of other CCs, and patient safety and patients'/relatives' feelings of safety are represented in every conceptual category. Figure 6 shows that some categories, such as "technical skills and biomedical knowledge," are patient safety oriented, while others, such as "creating a good atmosphere and having a supportive and encouraging attitude" relate to feeling safety. However, the commitment, genuine concern and compassionate attitude necessary to create this positive and motivational atmosphere requires comprehensive surveillance and thus ensures patient safety. All conceptual categories represent a part of the whole and illustrate the complexity of ICU nursing, as described in (FOC) (Kitson et al., 2013), demonstrated difficulties to differentiate physical impact of fundamental care from its psychological and relational aspects. Nevertheless, dividing the whole into parts makes the concepts operational and facilitates individual and purposeful training in clinical practice.

Being safe and feeling safe reflect two bodies of work in nursing care described by Feo et al. (2018) as "compassionate care" and FOC. FOC literature addresses physical care while compassionate care literature mainly does not. Feo et al. (2018) seek an agreed definition of fundamental care. This meta-ethnography might lead to greater conceptual clarity about "fundamental intensive care" by bringing the CCs "together" and constituting a basis for education and excellence in ICU nursing.

The high-technology ICU environment and the complexity of critically ill patients' conditions require an advanced level of technical skills and biomedical knowledge. Technology and care are inseparable (Price, 2013; Stayt et al., 2015) underscoring the importance of training and education. Expert ICCNs are able to focus on both the machine and the patient (Crilly et al., 2019), and this may allow them to get closer to the patient and their relatives (McGrath, 2008). Due to the high impact of technological nursing in ICUs, Locsin's
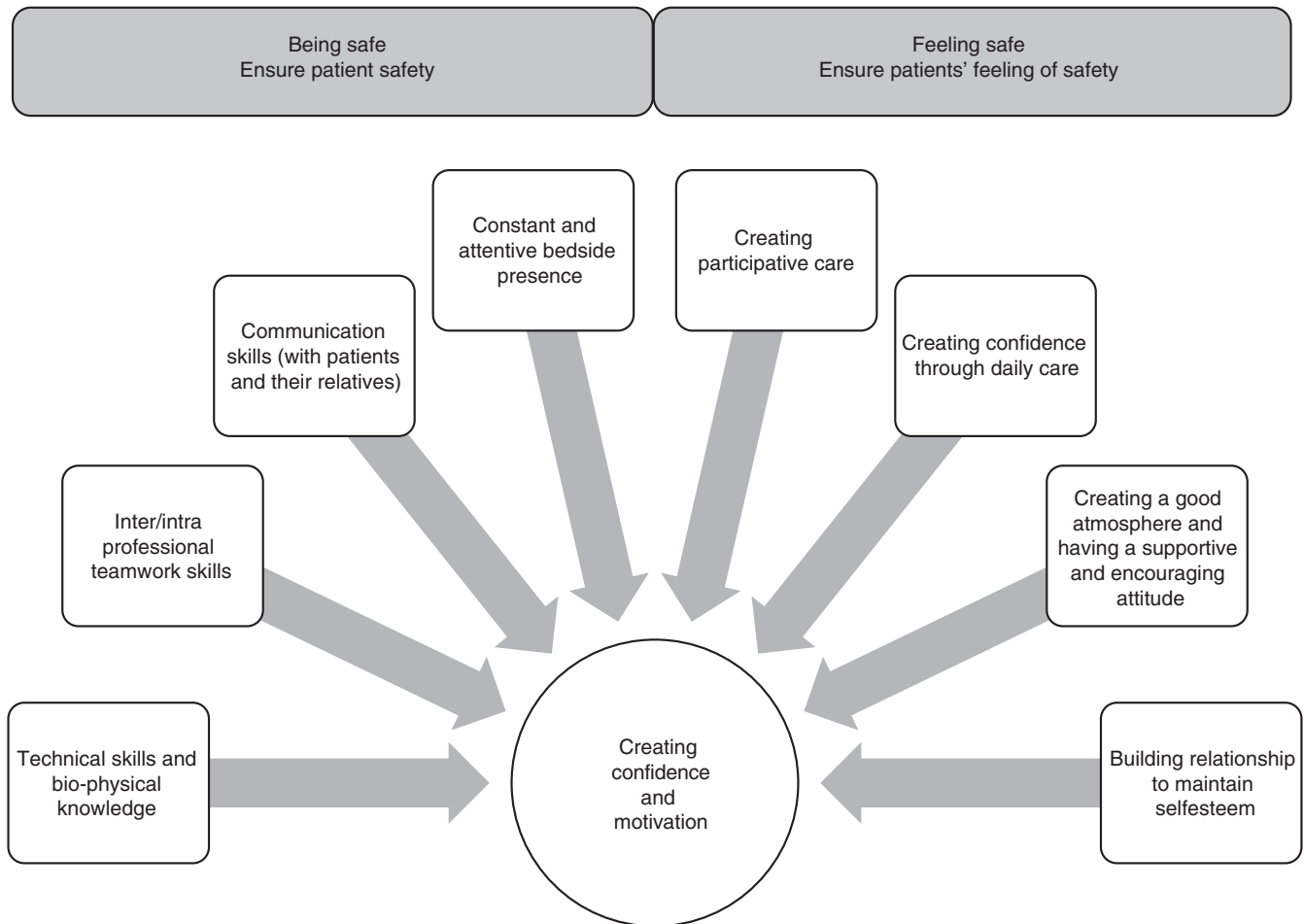
Being safe Ensure patient safety	Feeling safe Ensure patients' feeling of safety

FIGURE 6 Conceptual framework. The core qualities and competences of ICCNs. Abbreviation: ICCNs, intensive care nurses

(2005) middle-range theory of "technological competency as caring in nursing" (TCCN) is useful for this discussion. Technological expertise has been perceived as non-caring, focusing on technology rather than persons; TCCN, however, refutes this notion. The person is the focus of nursing and "various technological means can and should be used in the practice of knowing persons in nursing" (Locsin, 2010, p. 461). The range of concepts identified in this study shows that persons receiving nursing care and their families strive for wholeness. Technology allows ICCNs to know patients and relatives more fully as human beings who are contributors to care, not only objects of care (Locsin & Purnell, 2015).

This synthesis identified an inconsistency when it comes to professional versus personal attitudes. The ICCNs emphasized professionalism while patients and relatives desired a personal, compassionate relation. In light of PCHC, TCCN and the results of this meta- ethnography, we argue that ICCNs should be both compassionate and professional. Competence without compassion can be inhumane, and compassion without competence can be meaningless, even harmful (Roach, 1987). Another inconsistency is the different perceptions of what information should be given and how? ICCNs believed that information should be short and limited while patients and relatives appreciated comprehensive and continuous

information. Individual needs are important, as in all person-centred healthcare activities.

The paradigm shift to light or minimal sedation of ICU patients has changed our daily practice (Laerkner et al., 2017; Lind et al., 2018; Mortensen et al., 2019). Despite a more humane environment and lighter sedation, human suffering is still evident. Patients "descend to a liminal state, where they face the choice of life or death" (Egerod et al., 2015, p. 1335). ICCNs and relatives play an important role in patients' transition back to life or, we would add, in preparing for a dignified death. The conceptual framework of core qualities and competencies could guide our efforts to support this role.

There is much debate about whether or not a meta-ethnography requires a comprehensive search. Does the disproportionate amount of time spent doing this improve synthesis quality (Booth, 2016, 2018; Campbell et al., 2003; Toye et al., 2013)? This meta-ethnography has a broad scope aiming to get an overview of what is known about the topic; the search was, thus, considered as sensible use of time and a study strength. The last update of the literature search added nothing new to the analysis. This indicates that data saturation was reached and suggests adequacy of data (Lewin et al., 2015). It is more in keeping with meta-ethnography to use 'how' and 'why' in research questions, rather than 'which'. Our rationale for

using which as interrogative was that it would lead us to papers including both 'how' and 'why' certain qualities and competencies are important.

Including all three perspectives strengthened the relevance of this study. The geographical distribution of the primary studies, with the majority being from Scandinavia, may represent a weakness. Nevertheless, the characteristics of ICU patients are the same worldwide (Coombs & Lattimer, 2007) and the core qualities and competences ought to be transferable to ICCNs globally.

To emphasize the importance of the conceptual insight, the research team investigated the primary articles prospectively to evaluate the differential benefit they could have on the quality of the synthesis (Booth, 2018). Some have criticized the synthesis of studies with different methodologies, representing different philosophical positions (Dixon-Woods et al., 2005). Others claim that variation is legitimate (Malterud, 2017; Thorne, 2017), noting that heterogeneity inspires reuse and synthesis, given that the scientific quality is high (Thorne, 2017).

An important strength is the thorough description of how the meta-ethnography was conducted. This transparent reporting, illustrated with tables and figures, allows the reader to make a judicious decision about transferability. The reader is informed that the research team worked independently when reviewing and assessing the literature search and when reading the studies and noting concepts. While collaborating closely, in a constant dialogue, when discussing whether studies should be included or not in the interpretative phases. Subjectivity and reflexivity are premises of interpretative research (Creswell & Poth, 2018). The members of the research team acknowledge and reflect on their role as researchers.

6 | CONCLUSION

A conceptual framework expressing the interrelationship between the core qualities and competencies of ICCNs has been developed in accordance with the aim of this meta-ethnography. All the conceptual categories are essential to create confidence and motivation in ICU patients and their relatives. Some CCs are more patient safety oriented, while others are related to the feeling of safety. All have components of both characteristics. Although the CCs are interrelated, it nevertheless makes sense to clarify differences to make them operative for training and education. The framework expresses fundamental intensive care and thus could form a basis for a training and assessment tool to promote excellence in ICU nursing education and practice.

Further research should validate the findings by involving each perspective to strengthen the framework and contribute to safe, person-centred intensive care. The overall aim of this study was to create a certain wholeness. Each CC represents separate research fields, all in constant progress, leading to new knowledge and sometimes even new paradigms. Thus, this framework must be dynamic in content and updated in line with new knowledge.

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