Synthesis of Intensive Care Nurses' Experiences of Caring for Patients With Delirium

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Background: *There is a paucity of studies synthesizing intensive care nurses' experiences of taking care of patients with delirium. A better understanding of nurses' experiences provides an opportunity to identify areas that can be strengthened to improve care.* ***Aim:*** *To gain insight into intensive care nurses' experiences of caring for patients with delirium through summarizing the existing qualitative studies in the area.* ***Methods:*** *Databases of Medical Literature Analysis and Retrieval System Online (MEDLINE), Cumulative Index of Nursing and Allied Health Literature (CINAHL) Plus, PubMed, and ProQuest Dissertations & Theses Global were searched for qualitative or mixed-method primary research studies, resulting in 269 records screened for eligibility. A three-stage thematic synthesis was followed.* ***Findings:*** *Nine studies were included in the review. Twelve descriptive themes emerged outlining critical care nurses' experiences in the four aspects of delirium care. For prevention, the common nursing themes were using holistic nursing care to promote nighttime sleep, orientate patients through human interaction, and promote early mobilization. Intensive care nurses' experience of delirium assessment included their perceived utility of screening, their understanding of using a screening tool, and their impression of integrating nursing assessment. In terms of treatment, nurses' experience focused on pharmacological and nonpharmacological methods, as well as their attitude toward the use of physical restraints and chemical sedation. Nurses' overall experience of caring for patients with delirium in intensive care units includedemotional exhaustion, physical fatigue, and the perceived low priority and inconsistency of delirium management.* ***Conclusions:*** *Intensive care nurses' complex experiences of caring for patients with delirium revolved around delirium prevention, assessment, treatment, and the overall process of care. Implications for practice include: multicomponent delirium prevention strategies, integrating the use of screening tools and nursing assessment for delirium detection, focusing on nonpharmacological interventions, and offering on-job support to nurses who care for delirious patients.*

Keywords: nurses, experiences, delirium, intensive care units, qualitative review

INTRODUCTION

Delirium is an acute decline of neurofunction in attention, awareness, and cognition that is not explained by a pre-existing, established, or evolving neurocognitive disorder (American Psychiatric Association [APA], 2013). The prevalence of delirium in the intensive care unit (ICU) is reported to be up to 80% (Hayhurst et al., 2020). Based on the psychomotor presentation, delirium is classified into three motoric subtypes: hyperactive, hypoactive, and mixed delirium (APA, 2013). Clinically, however, delirium in the ICU can

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be categorized into five phenotypes: metabolic, hypoxic, septic, sedative-associated, and unclassified delirium (Girard et al., 2018). The occurrence of ICU delirium is associated with many adverse outcomes. In the short term, ICU delirium is linked to prolonged mechanical ventilation, extended length of stay in the ICU and hospital, increased morbidity and mortality (Faria & Moreno, 2013; Mehta et al., 2015). In the long run, patients affected by delirium have increased odds of institutionalization (Bounds et al., 2016); and, if they make it home, they have increased risk for the post-intensive care syndrome with declined cognitive and overall functional capacities (Ely, 2017; Wolters et al., 2014). Therefore, effective delirium prevention and management strategies are needed in the ICU to minimize the harm it may cause.

ICU delirium management is a multidisciplinary approach. However, nurses, who are frontline care providers and have continuous contact with patients, are in the unique position of delivering direct care to delirious patients and play the vital role of coordinating interventions from all involved disciplines (Zamoscik et al., 2017). Consequently, nurses' experiences of delirium care not only provide important information regarding the current state of delirium management but also offer an opportunity to identify barriers and areas that can be potentially improved.

Although there are many publications related to ICU delirium, they tend to focus on its etiology and management, such as the risk factors of ICU delirium, its screening tools, and associated pharmacological or nonpharmacological interventions (Hshieh et al., 2015; Serafim et al., 2015; Zaal et al., 2015). There is a paucity of research studies on ICU nurses' experiences of taking care of patients with delirium. In this sense, it is valuable to synthesize currently available evidence in this area to develop a better understanding of nurses' experiences and to identify potential gaps in the literature. A deep insight into this phenomenon will help to identify challenges faced by nurses. Potentially, effective and practical strategies can be developed to overcome these challenges for improved patient care.

OBJECTIVES

The aim of this qualitative review was to synthesize existing studies that have explored nurses' experiences of managing ICU delirium to gain insight into improving delirium care in the ICU. The review was guided by the research question: "What are the nurses' experiences of caring for patients with delirium in the ICU?"

METHODS

The review was guided by the three-stage thematic synthesis method developed by Thomas and Harden (2008), which has been recommended by experts in the field of qualitative review methodology as "likely to be the most suitable method for undertaking a qualitative evidence synthesis" (Noyes et al., 2018, p. 54). We followed a rapid review framework, with shorter timeframe, screening and evaluation were conducted by one reviewer and validated by all other authors. Although there are no established rapid review methods for qualitative evidence, our approach was informed by the McMaster Rapid Review guidance (Dobbins, 2017).

Literature Search Strategy

Four search terms and their combinations were used based on the aim of the review: (a) nurs*, (b) experienc*/ perception, (c) deliriu*, and (d) intensive care / critical care / ICU(s). These search terms were searched on November 24, 2019 in electronic databases of Medical Literature Analysis and Retrieval System Online (MEDLINE), Cumulative Index of Nursing and Allied Health Literature (CINAHL) Plus, PubMed, and ProQuest Dissertations & Theses Global. During the search, no year limit was applied, and the search was performed over the default time period of each database to ensure comprehensiveness. The retrieved titles, abstracts, or full texts were screened against eligibility criteria by the first author. Detailed results for each step of the screening process were reviewed and approved by the other three authors.

Consensus was reached among all authors through discussions.

Eligibility Criteria

Inclusion criteria for this review were as follows: (a) qualitative or mixed-method primary research studies addressing ICU nurses' experiences of delirium care, (b) for multiprofessional studies, at least 50% of the participants being ICU nurses to ensure nurses' representation in the sample, and (c) published in English in a peer-reviewed journal. Articles were excluded if (a) the focus of the study was solely on nurses' awareness, beliefs, attitudes, or knowledge of delirium; (b) the design of the study was quantitative survey; (c) the studied disease process was "delirium tremens," substance withdrawal, or dementia; and (d) the setting of the study was not intensive care.

Data Evaluation

Quality appraisal was conducted by the Critical Appraisal Skills Programme (CASP) qualitative checklist, a 10-question instrument designed for assessing the quality of qualitative studies (Critical Appraisal Skills Programme, 2018) (Table 1).

Date Extraction, Analysis, and Synthesis

Thomas and Harden's (2008) three-stage thematic synthesis method was followed for data extraction, analysis and synthesis. The detailed data —the "Findings" or "Results" section of each selected article —were inductively coded line-by-line into codes in the first stage. For the single mixed-method study (Steinseth et al., 2018) included in this review, only the qualitative component of its findings was coded in this stage for further synthesis to reflect this review's focus on qualitative evidence. In the second stage, the codes were grouped and developed into descriptive themes, which were further processed in the last stage to generate ideas for discussion and implications (Thomas & Harden, 2008). Data organization and thematic synthesis were achieved through the utilization of NVivo qualitative data analysis software (version 12 Pro, QRS International Pty Ltd, Doncaster, Victoria, Australia).

FINDINGS

A flow diagram of the search process using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) system appears in Figure 1 (Moher et al., 2009). In total, 269 records were screened for eligibility after the removal of duplicates. Nine studies fulfilled the eligibility criteria, and none were excluded for quality concerns (Table 1). These studies were conducted in ICUs from seven countries. Six studies adopted a focus group interview method, and the remaining three utilized the one-on-one interview strategy. Three out of the nine studies also recruited physicians along with ICU nurses as their research participants (Table 2). The included studies are summarized in Table 3. After analysis and interpretation, 12 descriptive themes emerged. These themes capture nurses' experiences of ICU delirium in the four aspects of delirium management: prevention, assessment, treatment, and the overall impression (Table 4).

Nurses' Experience of ICU Delirium Prevention

Six out of the nine articles commented on nurses' experience of delirium prevention. Strategies identified through their experience demonstrated that they had adopted a multicomponent approach with three main foci: promoting nighttime sleep, utilizing multiple measures to orientate patients, and early mobilization.

Promoting Nighttime Sleep. ICU nurses recognized the importance of supporting the patient's circadian rhythm in delirium prevention, but they also realized there were many barriers to quality nighttime sleep in the ICU, such as frequent nursing activities at night, environmental lights, and noises from equipment and conversations (Palacios-Ceña et al., 2016). One frequently mentioned and simple strategy was to control noises and light at nighttime (Jung et al., 2013; Palacios-Ceña et al., 2016; Zamoscik et al., 2017). Also, minimizing unnecessary nighttime care and clustering nursing activities were thought an important practice to promote nighttime sleep (Palacios-Ceña et al., 2016; Zamoscik et al., 2017).

TABLE 1. Summary of Quality Appraisal Using CASP Qualitative Research Checklist

CASP Qualitative Checklist Item	Collet et al. (2019)	Jung et al. (2013)	LeBlanc et al. (2018)	Oxenbøll-Collet et al. (2018)	Palacios-Ceña et al. (2016)	Steinseth et al. (2018)	Tsang et al. (2019)	Yue et al. (2015)	Zamoscik et al. (2017)
1. Was there a clear statement of the aims of the research?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. Is a qualitative methodology appropriate?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3. Was the research design appropriate to address the aims of the research?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes
4. Was the recruitment strategy appropriate to the aims of the research?	Yes	Can't tell	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes
5. Was the data collected in a way that addressed the research issue?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6. Has the relationship between researcher and participants been adequately considered?	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes
7. Have ethical issues been taken into consideration?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(*Continued*)

TABLE 1. Summary of Quality Appraisal Using CASP Qualitative Research Checklist (*Continued*)

CASP Qualitative Checklist Item	Collet et al. (2019)	Jung et al. (2013)	LeBlanc et al. (2018)	Oxenbøll-Collet et al. (2018)	Palacios-Ceña et al. (2016)	Steinseth et al. (2018)	Tsang et al. (2019)	Yue et al. (2015)	Zamoscik et al. (2017)
8. Was the data analysis sufficiently rigorous?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9. Is there a clear statement of findings	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10. How valuable is the research?	Very valuable rich descriptions; implications for future research; contribution to existing knowledge	Very valuable rich descriptions; the earliest study found in the targeted research area	Very valuable rich descriptions; contribution to existing knowledge	Valuable implications for clinical practice; focusing on delirium assessment only	Very valuable rich descriptions; contribution to existing knowledge	Somewhat valuable contribution to existing knowledge; focusing on delirium assessment in ventilated patients only	Valuable focusing on general PAD management; contribution to existing knowledge from a community ICU perspective	Valuable rich descriptions; contribution to existing knowledge	Very valuable rich descriptions; implications for clinical practice; contribution to existing knowledge

Note. CASP = the Critical Appraisal Skills Programme; ICU = intensive care unit; PAD = pain, agitation, and delirium.

Figure 1. PRISMA flow diagram of the study selection process for this review.

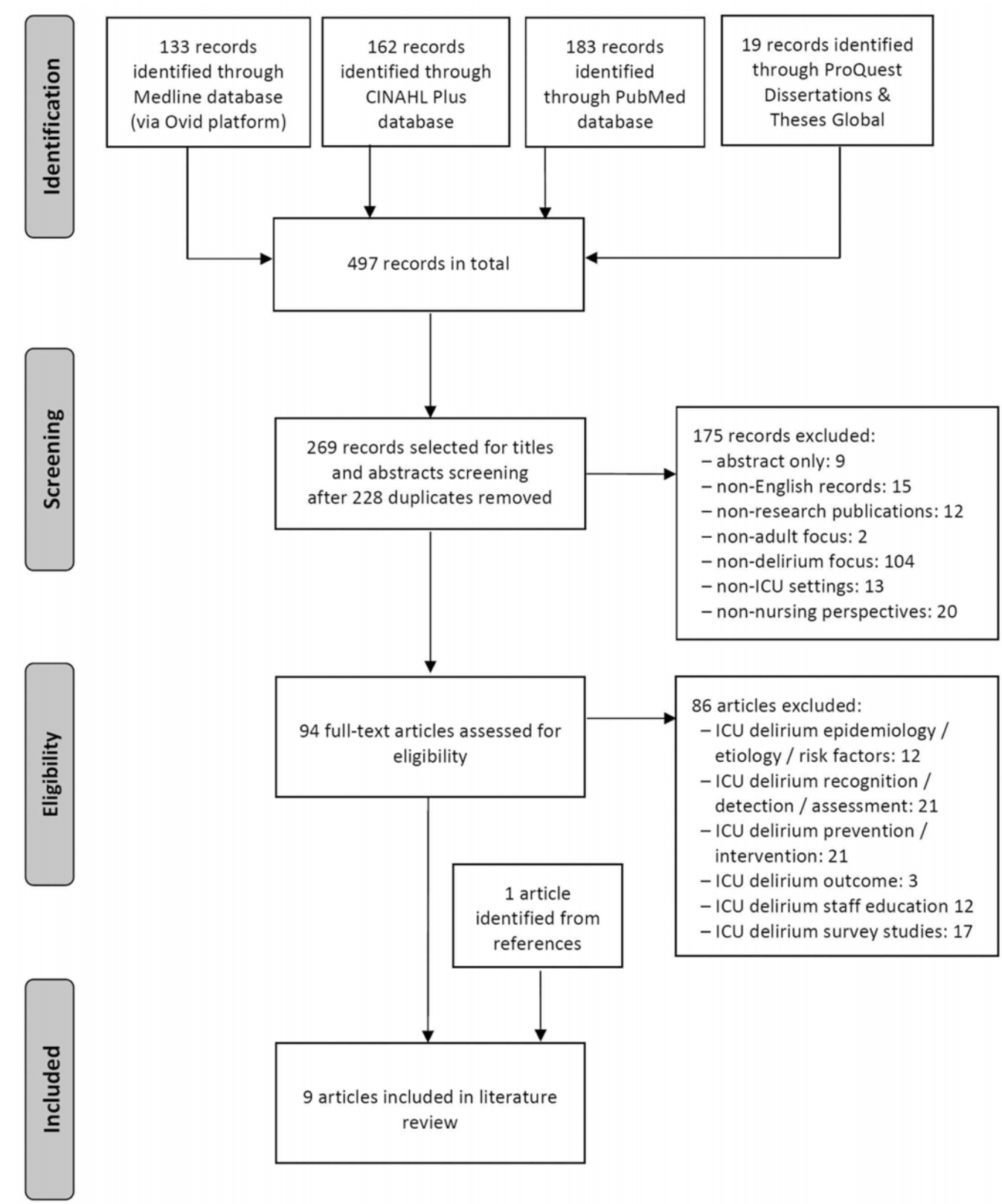

TABLE 2. Study Demographics

Item	Number of Studies							Total
Publication year	2013 1	2014 0	2015 1	2016 1	2017 1	2018 3	2019 2	9
Setting	Canada 2	China 1	Denmark 2	Korea 1	Norway 1	Spain 1	United Kingdom 1	9
Research design	Qualitative: focus group interview 6		Qualitative: one-on-one interview 2			Mixed method with one-on-one interview 1		
Participant discipline	ICU nurses only 6			ICU nurses and physicians 3				9

Note. ICU = intensive care unit.

Utilizing Multiple Measures to Orientate Patients. It was believed that the unfamiliar staff and stressful environment in the ICU contributed to the patient's disorientation; thus, the perceived importance of frequent orientation and reorientation by using environment cues was highlighted by nurses as a measure of preventing delirium (Jung et al., 2013; LeBlanc et al., 2018; Palacios-Ceña et al., 2016). Another subtle but effective technique identified was using human interaction, such as staying with the patient, having a conversation, and offering empathy through nonverbal communication (Jung et al., 2013; Zamoscik et al., 2017).

Early Mobilization. The beneficial effects of early mobilization were mentioned in three studies (Collet et al., 2019; Palacios-Ceña et al., 2016; Zamoscik et al., 2017). However, Palacios-Ceña et al. (2016) also pointed out that ICU nurses had experienced difficulties in mobilizing patients, especially when there was a lack of personnel, equipment, or clear policy stating when and how patients should be mobilized. ICU nurses perceived early mobilization as an important strategy for delirium prevention, but they also had a challenging experience in implementing it.

Nurses' Experience of ICU Delirium Assessment

Eight of the nine articles included in the review addressed the ICU delirium assessment. Out of the eight studies, the works from Oxenbøll-Collet et al. (2018) and Steinseth et al. (2018) focused solely on delirium assessment especially the confusion assessment method for the intensive care unit (CAM-ICU) screening tool (Vanderbilt University Medical Center, 2016). Another study listed assessment as part of its main study purpose (Jung et al., 2013). Nurses' experience of ICU delirium assessment can be discussed from the angle of delirium screening, using the screening tool of CAM-ICU, and nursing assessment of delirium.

Delirium Screening. Routine delirium screening was believed to be an essential element of ICU delirium care, while nurses were the professionals that are ideally situated to conduct the screening. However, three studies of the review suggested that, based on some participants' experience, the screening results may not fully influence patient care in terms of ICU delirium interventions (Jung et al., 2013; Oxenbøll-Collet et al., 2018; Zamoscik et al., 2017). Participants viewed the use of the screening tool provided limited clinical utility; they were uncertain a positive result could translate into any intervention. Delirium screening was perceived to increase the workload and led to frustration.

Using the CAM-ICU Tool. The CAM-ICU tool is one of the two validated delirium screening instruments in the ICU, with the other one being the Intensive Care Delirium Screening Checklist (ICDSC) (Gélinas et al., 2018). In seven out of the nine studies that addressed ICU delirium assessment, participants had experiences of using the

TABLE 3. Summary of the Included Studies

Authors/-Country	Aim	Sample and Setting	Design/Data Collection and Analysis	Main Findings
Collet et al. (2019)/ Denmark	To explore nurses' and physicians' experiences and approaches to managing ICU delirium	Purposive sampling Five medical–surgical ICUs at regional and university hospitals 39 participants: 24 RNs (62%) and 15 MDs	Qualitative Eight focus group semi-structured interviews A five-stage framework-based analysis method using NVivo	A delirium management algorithm summarized: • The decision to treat or not to treat based on delirium phenotype • The decision to act or not to act based on experience or evidence • The decision to intervene using nursing care or medications
Jung et al. (2013)/Korea	To assess ICU nurses' experience caring for delirious patients and the empirical evaluation of the clinical feasibility of the CAM-ICU	Unknown sampling method A surgical ICU at a university hospital 18 participants: all ICU nurses	Qualitative Three focus group narrative interviews A four-step analysis method using Excel	Experiences caring for patients with delirium: • Experience with delirium patients • Features of delirium patients in the ICU • ICU delirium risk factors recognized by the nurses Delirious patient care and preventive nursing interventions: • Delirious patient care • Preventive interventions in an isolation room CAM-ICU clinical feasibility • Prior knowledge, testing times, and adequacy, and so on. Applications of CAM-ICU to clinical work • Accuracy, testing cycle, and barriers, and so on.
LeBlanc et al. (2018)/Canada	To examine the lived experience of ICU nurses caring for patients with delirium and to identify related facilitating and inhibiting factors	Purposive sampling Two mixed-type ICUs at a university hospital Eight participants: all ICU nurses	Qualitative Eight one-on-one narrative interviews A three-approach interpretive phenomenological analysis as described by van Manen	The essence of the experience of nurses caring for patients with delirium in intensive care was revealed to be finding a way to help them come through it. Six themes identified: • It's exhausting • Making a picture of the patient's mental status • Keeping patients safe: it's a really big job • Everyone is unique • Riding it out with families • Taking every experience with you Facilitating and inhibiting factors were related to the environment, nurse, and patient.

(*Continued*)

TABLE 3. Summary of the Included Studies (*Continued*)

Authors/-Country	Aim	Sample and Setting	Design/Data Collection and Analysis	Main Findings
Oxenbøll-Collet et al. (2018) / Denmark	To identify nurses' and physicians' perceived professional barriers to using the CAM-ICU in Danish ICUs	Purposive sampling Four medical–surgical ICUs at four university hospitals 34 participants: 20 RNs (59%) & 14 MDs	Qualitative Nine focus group semi-structured interviews A three-phase pragmatic approach of inductive content analysis method using NVivo	Professional role issues: CAM-ICU affects nursing care, clinical judgment, and professional integrity Instrument reliability: CAM-ICU required alertness and stability; is difficult to use, and is potentially harmful Clinical consequence: CAM-ICU lacks clear implication; is used only by request; and is disclosed to the patient
Palacios-Ceña et al. (2016)/Spain	To explore the experiences of doctors and nurses faced with delirium in ICUs and to describe the process of delirium management	Purposive sampling Five ICUs at four hospitals in Madrid 38 participants: 19 RNs (50%) & 19 MDs	Qualitative Seven focus group semi-structured interviews: six homogenous groups and one heterogeneous group (the 7th). Participants in the 7th group were selected randomly from the first six groups. A thematic analysis approach was used to analyze data.	The professional perspective on delirium • A great sense of doubt of delirium management • Stereotypes regarding patients with delirium Implementing treatment • Pharmacological: there is no medication of choice; delirium is not a life-threatening emergency • Nonpharmacological: verbal restraint, mechanical restraint, sleep, environment, and early mobilization Work organization in the ICU • Delirium associated with nighttime care • Absence of protocol • Group pressure influenced decision-making and care

(*Continued*)

TABLE 3. Summary of the Included Studies (*Continued*)

Authors/-Country	Aim	Sample and Setting	Design/Data Collection and Analysis	Main Findings
Steinseth et al. (2018)/ Norway	To investigate the assessment of delirium by ICU nurses and their experiences of using the CAM-ICU in mechanically ventilated patients	Purposive sampling An ICU in the eastern part of Norway Seven participants interviewed: all ICU nurses	Mixed-method Quantitative component: paired CAM-ICU forms of 15 patients filled out by 30 nurses; analyzed by a manual frequency analysis Qualitative component: seven one-on-one semi-structured interviews; analyzed with a seven-phase data analysis method	Delirium assessment using the CAM-ICU tool: out of the 15 paired forms: • Four similar results • Three different results • Eight incomplete forms *(the above quantitative results were excluded for synthesis in this review)* Experiences of using the CAM-ICU • Widely varied experiences in terms of preparedness, view of the tool, and use of the tool for the three descriptive categories of the seven interviewed nurses: the noncommittal, the insecure, and the responsible
Tsang et al. (2019) Canada	To explore the experience, beliefs and perceptions of ICU nurses on the management of PAD in critically ill patients.	Purposive sampling A 14-bed ICU in a community hospital 46 participants: all ICU nurses	Qualitative 5 focus group sessions with a total of 10 separate groups (1~3 groups/session). Interviewed with a semi-structured question guide. A thematic analysis method was used to search for themes and patterns.	Divergent professional perspectives on patient wakefulness state in terms of: • When to worry? • The optimal patient wakefulness state Variable professional perspectives on PAD management of critically ill patients depending on: • Clinical conditions of patients • Preference of healthcare providers The factors impacting PAD management including: • Interprofessional dynamics • Environmental factors • Family input

(*Continued*)

TABLE 3. Summary of the Included Studies (*Continued*)

Authors/-Country	Aim	Sample and Setting	Design/Data Collection and Analysis	Main Findings
Yue et al. (2015)/ China	To explore the experiences of nurse caring for patients with delirium in ICU in China	Purposive sampling 12 ICUs of varied type at a single university hospital in Beijing 14 participants: all ICU nurses	Qualitative 17 one-on-one semi-structured interviews conducted, but only included 14 results, as data saturation reached after analysis of the 14th interview A highlighting approach was used for the thematic analysis as described by van Manen	Internal and external barriers to care • Symptom recognition • Lack of knowledge • Continuity of care • Inadequate assessment Care burden: workload, psychological pressure & injury • Physical burden • Psychological pressure • Occupational injury Dilemmas in decision-making • Family visit: come in or keep out • Patients' ability: useless or useful
Zamoscik et al. (2017)/ United Kingdom	To explore nurses' experiences and perceptions of delirium, managing delirious patients, and screening for delirium	Purposive sampling A medical–surgical ICU at a teaching hospital 12 participants: all ICU nurses	Qualitative Two focus group semi-structured interviews A six-step inductive thematic analysis method using Braun and Clarke's framework	Seven themes identified: • Delirium as a secondary matter • Unpleasant nature of delirium • Skepticism about delirium assessment • Distrust in delirium management • Value of communication • Nonpharmacological therapy • Need for reviewed delirium policy

Note. CAM-ICU = confusion assessment method for the intensive care unit; ICU = intensive care unit; MD = Doctor of Medicine; PAD = pain, agitation, and delirium; RN = registered nurse.

TABLE 4. ICU Delirium Care Experienced by Nurses

Descriptive Theme	Reference	Example
Nurses' experience of ICU delirium prevention:		
• Promoting nighttime sleep: controlling noises and light and minimizing unnecessary nighttime care	Collet et al. (2019), Jung et al. (2013), Palacios-Ceña et al. (2016), Tsang et al. (2019), Zamoscik et al. (2017)	". . . at night time, you are bothering patients every hour, either to take their temperature, or due to the urine, or for the medication, or for a scale (. . .) the patient is easily woken, gets scared, and ends up getting disoriented. This way of working does not favor the patient's rest or wellbeing." (Palacios-Ceña et al., 2016, p. 6)
• Utilizing multiple measures to orientate patients: human interaction and environmental cues	Jung et al. (2013), LeBlanc et al. (2018), Palacios-Ceña et al. (2016), Tsang et al. (2019), Zamoscik et al. (2017)	"Listening patiently to the patient and sitting beside him/her holding hands." (Jung et al., 2013, p. 102)". . . manipulating the environment by modifying noise and light, or providing comfort by bathing or repositioning, 'just open the curtains so they see it's daylight' . . ." (LeBlanc et al., 2018, p. 95)
• Early mobilization: important but can be challenging	Collet et al. (2019), Palacios-Ceña et al. (2016), Zamoscik et al. (2017)	"It seems simple, but to lift an intubated patient, with all the pumps, the monitor, all the cables, drainages, catheters and so on is not easy, nobody likes to do it, sometimes it is more risky to mobilise the patient than to wait for delirium to appear and then manage it . . ." (Palacios-Ceña et al., 2016, p. 6)
Nurses' experience of ICU delirium assessment:		
• Delirium screening: the results may not influence interventions	Jung et al. (2013), Oxenbøll-Collet et al. (2018), Zamoscik et al. (2017)	"if I just use that as (. . .) another assessment tool that I need to do at the end of the day and not act upon it. So, I'm really not taking any value from that tool." (Zamoscik et al., 2017, p. 97)
• Using the CAM-ICU tool: facilitating interdisciplinary communication but not gaining popularity among nurses	Jung et al. (2013), LeBlanc et al. (2018), Oxenbøll-Collet et al. (2018), Steinseth et al. (2018), Zamoscik et al. (2017)	"Well it's just so silly if you've gone and talked normally with the patient, then this one patient was hallucinating but scores CAM-ICU negative. And then we go and talk normally with a patient who scores positive—what's that—what are we going to do? What do we really know? It's a grey area and it's hard to navigate." (Oxenbøll-Collet et al., 2018, p. 18)
• Nursing assessment of delirium: an integrated approach more than using a screening tool	Collet et al. (2019), Jung et al. (2013), LeBlanc et al. (2018), Oxenbøll-Collet et al. (2018), Palacios-Ceña et al. (2016), Yue et al. (2015), Zamoscik et al. (2017)	"Participants drew upon professional knowledge, previous experiences with patients, as well as information from family members to fill in this picture. They noted behaviors, monitored for changes and sometimes used the CAM-ICU. Considered together, all of this information helped participants to make a picture of the patient's mental status in the moment." (LeBlanc et al., 2018, pp. 94–95)

TABLE 4. ICU Delirium Care Experienced by Nurses (*Continued*)

Descriptive Theme	Reference	Example
Nurses' experience of ICU delirium treatment:		
• Pharmacological treatment: limited options and questionable effectiveness	Collet et al. (2019), Jung et al. (2013), LeBlanc et al. (2018), Palacios-Ceña et al. (2016), Zamoscik et al. (2017)	"Participants felt that treatment options for delirium are limited. The provided therapy was described as 'airy-fairy,' delirium strategy as 'do what you think is best and see how we go,' and the patients' recovery as irrelevant of the given treatment." (Zamoscik et al., 2017, p. 97)
• Nonpharmacological treatment: considerable effort of reorientation and encouragement of family involvement	Jung et al. (2013), LeBlanc et al. (2018), Palacios-Ceña et al. (2016), Yue et al. (2015), Zamoscik et al. (2017)	"Sometimes, we call the family member and ask them to come to the ICU to comfort the patient. This approach works well. As soon as the patients see their family members, they calm down and regain their consciousness." (Yue et al., 2015, p. 6)
• Physical restraints and chemical sedation: undesired and last resort to ensure safety	Collet et al. (2019), Jung et al. (2013), LeBlanc et al. (2018), Palacios-Ceña et al. (2016), Yue et al. (2015), Zamoscik et al. (2017)	". . . suddenly the patient was out of bed, found a pair of scissors, cut the electrical cords, and threatened the staff . . . he ended up getting a complete cocktail of propofol, fentanyl, clonidine, and midazolam . . . he got the whole package . . . it lasted a week . . . we had to use the whole arsenal." (Collet et al., 2019, p. 301)
Nurses' overall experience of caring for patients with delirium in ICUs:		
• Emotional exhaustion: being on guard and getting ready at any moment	Jung et al. (2013), LeBlanc et al. (2018), Tsang et al. (2019), Yue et al. (2015), Zamoscik et al. (2017)	"Delirium symptoms significantly increased the patients' risk of harm and compromised their safety. In order to ensure safety, these nurses felt they needed to be ready, at moment notice, for all kinds of emergencies, consequently feeling psychologically exhausted." (Yue et al., 2015, p. 5)
• Physical fatigue: caused by vigilant observation as well as increased workload	Jung et al. (2013), LeBlanc et al. (2018), Tsang et al. (2019), Yue et al. (2015), Zamoscik et al. (2017)	"The participants often experienced physical burn-out due to long periods of time spent ensuring patient's safety and their own. The physical exhaustion was compounded by the confusing instructions [requests] and lack of cooperation on patients' part." (Yue et al., 2015, p. 5)
• General perceptions of ICU delirium management: a low priority and lack of consistency	Collet et al. (2019),Jung et al. (2013), LeBlanc et al. (2018), Oxenbøll-Collet et al. (2018), Palacios-Ceña et al. (2016), Tsang et al. (2019), Zamoscik et al. (2017)	"You spend your whole shift calling the doctor, it's as if the patient were your sole responsibility and there is no way they will prescribe you anything . . . when they do, they prescribe a negligible dose in relation to the patient's weight . . . and if it is night time, sometimes you have to wait, they do not consider it to be an emergency." (Palacios-Ceña et al., 2016, p. 5)

(*Continued*)

TABLE 4. ICU Delirium Care Experienced by Nurses (*Continued*)

Descriptive Theme	Reference	Example
		". . . the choices of pharmacotherapy vary significantly among intensivists resulting in instances where patient's analgesics, sedatives or antipsychotics were changed drastically without proper patient assessment when there was a change-over of intensivists. Participants were also frustrated by inconsistent PAD management approaches among nurses . . ." (Tsang et al., 2019, p. 6)

Note. CAM-ICU = confusion assessment method for the intensive care unit; ICU = intensive care unit; PAD = pain, agitation, and delirium.

CAM-ICU tool; while the nurses in the remaining one study used clinical judgment rather than any formal screening tools to assess delirium (Yue et al., 2015). Nurses experienced the use of CAM-ICU facilitated interdisciplinary communication, but it was not widely adopted.

Nurses' perceived advantages in using the CAM-ICU lie in that it offered objective evidence and provided a standardized measurement that increased their confidence in communicating with the multidisciplinary care team (Jung et al., 2013; LeBlanc et al., 2018; Zamoscik et al., 2017). However, the CAM-ICU screening tool was not popular among nurses due to its limitations. First, the nurses who participated in the studies questioned the validity of the CAM-ICU based on their user experience. Although the specificity of the CAM-ICU has been reported as high as 88%–95% (Barman et al., 2018; Ely et al., 2001; van Eijk et al., 2009), the nurses participating in the studies were concerned regarding potential false positive results. For example, when the patients were too weak or still under influence of residual sedation, they were not able to respond properly to the CAM-ICU assessment items, such as squeezing hands when hearing letter "A" in a sequence of SAVEAHAART (Jung et al., 2013; Oxenbøll-Collet et al., 2018; Zamoscik et al., 2017). At the same time, false negative results were also suspected, especially after patients had been tested repeatedly, as they might have developed a memory of the correct responses (Jung et al., 2013; LeBlanc et al., 2018; Zamoscik et al., 2017). The second reason that the nurses disliked the CAM-ICU tool was its operational issues. The nurses perceived the test as time-consuming and difficult to use (Jung et al., 2013; Oxenbøll-Collet et al., 2018); and as shifting the focus of nursing from caring to interrogating (Oxenbøll-Collet et al., 2018). They also considered that the CAM-ICU could be impractical for patients who were uncooperative or distressed; or too long for those who were frail, as they may fall asleep before finishing the screening test (Jung et al., 2013). On the other hand, for patients with low risk of developing delirium, the CAM-ICU test may appear bizarre and thus trigger their suspicion, dismay or anger when they were asked to answer specific questions (Oxenbøll-Collet et al., 2018). Overall, distrust along with uncertainty regarding the usefulness of CAM-ICU in delirium management, made some nurses decide not to perform it or to perform it only when requested (Oxenbøll-Collet et al., 2018; Steinseth et al., 2018).

Nursing Assessment of Delirium. The nurses in the studies implied that delirium assessment was more than using a screening tool. According to them, a screening tool helped to make the clinical diagnosis of delirium; nursing assessment, however, was more concerned with knowing the patient, understanding the patient's needs, and offering related care accordingly (Collet et al., 2019; LeBlanc et al., 2018; Oxenbøll-Collet et al.,

2018; Yue et al., 2015; Zamoscik et al., 2017). In other words, nurses used an integrated approach, instead of relying solely on a screening tool, to detect delirium. LeBlanc et al. (2018) commented that the nurses in their study would consider a wide variety of information, including professional knowledge, previous exposure, personal observations, as well as family stories, and so on, to make a holistic assessment of the patient as a whole. They would *sometimes* use the CAM-ICU; however, its results would be supplemented with other assessments of the patient's mental status. A similar integration of using a screening tool and applying nursing intuition to detect delirium was also reported by Collet et al. (2019) and Zamoscik et al. (2017).

This holistic nursing approach to delirium assessment may explain, at least partially, the discrepancy between nurses' delirium assessment and that of a physician. Participants in the study conducted by Palacios-Ceña et al. (2016) described that, compared to nurses, physicians tended to have a more favorable neurological assessment of delirium. The nurses believed their assessment was performed continuously, which captured more information than the physician's sporadic spot-check, but they had been experiencing difficulties in convincing the physician (Jung et al., 2013; LeBlanc et al., 2018; Palacios-Ceña et al., 2016). Indeed, the sensitivity of ICU physicians' impression on patients' delirious status, without using any standard methods, has been reported as 29% (van Eijk et al., 2009).

Also, even though delirium screening had been implemented routinely in most settings of the reviewed studies, some participants expressed their voice that not all patients need to be screened every shift. Some patients had a low risk of developing delirium; thus, a less frequent screening period would be more suitable to prevent testing fatigue (Jung et al., 2013). Nurses, on the other hand, should be capable of making an independent judgment to decide when would be appropriate to use the screening tool (LeBlanc et al., 2018).

Nurses' Experience of ICU Delirium Treatment

Pharmacological Treatment. Participants consistently described their feeling that there were only limited options in selecting a pharmacological agent to treat delirium (Palacios-Ceña et al., 2016; Zamoscik et al., 2017). The most used first-line agent was haloperidol, a typical antipsychotic, which had questionable effectiveness with varying degrees of success (Collet et al., 2019; Palacios-Ceña et al., 2016; Zamoscik et al., 2017). Although benzodiazepines such as lorazepam and diazepam, or sedatives such as dexmedetomidine and propofol, were known to cause delirium themselves or prolong ICU stay, they had to be utilized when the first-line treatment failed (Jung et al., 2013; LeBlanc et al., 2018; Palacios-Ceña et al., 2016).

Meanwhile, three studies also explored physicians' experiences of ICU delirium management (Collet et al., 2019; Oxenbøll-Collet et al., 2018; Palacios-Ceña et al., 2016). According to these studies, the physicians were also frustrated with the lack of evidence-based recommendations, and not having specific medications for treating delirium (Collet et al., 2019; Oxenbøll-Collet et al., 2018; Palacios-Ceña et al., 2016). Even using the currently available medications would be challenging: "I'm not sure of how to dose haloperidol, sometimes the patient is asleep all morning, but agitated all night, you don't know how to get it right"; or ". . . despite administrating the recommended dosage, I have to intubate a patient due to the effects of the treatment" (Palacios-Ceña et al., 2016, p. 5). Physicians stressed this challenge prevented them to encourage the use of CAM-ICU screening tool (Oxenbøll-Collet et al., 2018).

Nonpharmacological Treatment. As a common practice, for delirious patients, ICU nurses often stayed with them patiently to reorientate and offer them compassionate nursing care to ensure their safety; however, the effectiveness of nurses' presence on patient reorientation varied depending on the patient's degree of delirium (Jung et al., 2013; Palacios-Ceña et al., 2016; Zamoscik et al., 2017). The presence of family members was also

found helpful; and sometimes they were called to stay with the patient to provide additional comfort (Jung et al., 2013; LeBlanc et al., 2018; Yue et al., 2015; Zamoscik et al., 2017). Besides these two common nonpharmacological interventions, delirium prevention strategies such as nighttime sleep promotion and early mobilization were also found useful in delirium treatment.

Physical Restraints and Chemical Sedation. Nurses' experience of restraint and sedation use was ambivalent. On one hand, physical restraints and chemical sedation were known risk factors for developing delirium and prolonging recovery, and their use was undesirable (LeBlanc et al., 2018; Zamoscik et al., 2017). On the other hand, however, agitated delirious patients could suddenly climb out of the bed, pull out life-supporting lines and tubes, and even become aggressive and combative. If such a patient was not responsive to the antipsychotic treatment and all reorientation efforts failed, the nurses were facing serious challenges of ensuring both the patient's and their own safety. Given the clinical challenges, physical restraints or chemical sedation were unavoidable decisions (Collet et al., 2019; Jung et al., 2013; LeBlanc et al., 2018; Palacios-Ceña et al., 2016; Yue et al., 2015; Zamoscik et al., 2017).

Nurses' Overall Experience of Caring for Patients With Delirium in ICUs

Emotional Exhaustion. The emotion of taking care of patients with delirium was reported from embarrassing, uncomfortable, anxiety-provoking, scary, and pressuring to intimidating, frustrating, struggling, and exhausting (Jung et al., 2013; LeBlanc et al., 2018; Yue et al., 2015; Zamoscik et al., 2017). The main source of stress was attributed to the fact that, due to the unpredictability of the delirious patient's behavior, the nurses had to be on guard and get ready at *any* moment to intervene in case the patient or themselves being in danger. This emotional burden was described as "afraid of an accident" (p. 5) in the article by Yue et al. (2015). Besides, delirious patients' agitation and noncooperation may interfere with the treatment delivery. Consequently, the nurses were also frustrated because they were not able to provide optimal patient care. This type of frustration played a role in nurses' emotional drain as well (LeBlanc et al., 2018).

Physical Fatigue. Along with emotional exhaustion, nurses also experienced physical fatigue when caring for patients with delirium. The fatigue mostly originated from the need of vigilance to prevent accidents: either constantly going back to the bedside or continuously staying with the patient (Jung et al., 2013; LeBlanc et al., 2018; Yue et al., 2015). In addition to the extra nursing time spent on careful monitoring, nurses' workload also significantly increased due to the delirious patients' inability to cooperate (LeBlanc et al., 2018; Yue et al., 2015), as well as their needs of psychological care (Zamoscik et al., 2017).

General Perceptions of ICU Delirium Management. The participating nurses' general impression of the overall ICU delirium management can be summarized into two terms: "low priority" and "lack of consistency."

First, from the nurses' perspective, it appeared that delirium was never a priority for medical management. Delirium was often considered a symptom of other medical issues or a complication of ICU stay; therefore, it was seldom treated as a high priority (Palacios-Ceña et al., 2016; Zamoscik et al., 2017). Admittedly, nurses' perception of delirium as not being taken seriously may also come from physician's hesitation to prescribe, simply because there were no effective medications for delirium and the use of sedatives can cause undesired adverse effects (Jung et al., 2013; Palacios-Ceña et al., 2016). It was also implied that, until the patient became agitated, delirium prevention and screening measures might not be a nursing priority either (Jung et al., 2013; Oxenbøll-Collet et al., 2018; Zamoscik et al., 2017).

Lack of consistency in delirium management was also perceived. Partially due to weak evidence-based recommendations, delirium management in the ICU was based on individual preference, which resulted in the provision of inconsistent delirium care (Collet et al., 2019; LeBlanc et al., 2018; Palacios-Ceña et al., 2016; Tsang et al., 2019). Therefore, to overcome inconsistencies and to improve patients' outcomes, the implementation of a tailored protocol for delirium management was strongly suggested (Collet et al., 2019; LeBlanc et al., 2018; Palacios-Ceña et al., 2016; Zamoscik et al., 2017).

DISCUSSION

Twelve descriptive themes emerged in this review from nine identified studies. These themes outline ICU nurses' experiences of caring for patients with delirium in the aspects of delirium prevention, assessment, treatment, and the overall impression.

The synthesized ICU nurses' experience in delirium prevention focused on their efforts in nighttime sleep promotion, constant patient reorientation, and early mobilization. This experience is consistent with the current clinical guidelines for the prevention and management of ICU delirium, in which a multicomponent, nonpharmacological intervention is recommended to optimize sleep, improve cognition, and promote mobility (Devlin et al., 2018). In this review, nurses also expressed the challenge of routinizing some preventative measures (e.g., early mobilization) in the ICU due to concerns of patient safety. However, a meta-analysis conducted by Nydahl et al. (2017) concluded that early mobilization and physical rehabilitation in the ICU appears to be safe with a low incidence of 2.6% for potential safety events (i.e., clinical deterioration in patient status) and an even lower incidence of 0.6% for safety events with consequences (i.e., potential safety events requiring stopping mobilization/rehabilitation and/or additional interventions). Therefore, routine ICU delirium preventative practice should continue to be encouraged and emphasized. This multicomponent approach of delirium prevention also embodies the spirit of holistic nursing care through patient-centered care, presence, empathy, and compassion, making nurses the ideal candidate to coordinate and deliver quality delirium care in the ICU. Indeed, nurse-led multicomponent preventive interventions aiming at reducing the incidence and duration of ICU delirium are currently under clinical trials (Lynch et al., 2020; Papathanassoglou et al., 2019; Wassenaar et al., 2017). After their completion, there will be more evidence available on nursing leadership in ICU delirium management.

Routine delirium assessment using a valid tool is an important component of ICU delirium management, and current clinical guidelines consider it as a good practice (Devlin et al., 2018). However, according to the findings of this review, the nurses experienced some frustration of using the CAM-ICU. They felt the screening tool may facilitate interdisciplinary communication, but at the same time, they were skeptical of its utility in ICU delirium screening. On one hand, the nurses felt a positive screening result may not always influence decision making and lead to interventions; and on the other hand, they also believed delirium assessment was an integrated approach that was more than just using a screening tool. Similar findings of discouraged delirium assessment and suboptimal screening tool utilization were also reported in other studies with the usage rate of a validated tool ranging from 17% to 48% (Hermes et al., 2018). As the selected studies of this review only addressed the CAM-ICU, it is unclear whether the finding of underutilization applies to the other valid and reliable ICU delirium screening tool (i.e., the ICDSC). Regardless, more studies are needed to identify the potential barriers of using a validated tool to screen delirium in the ICU.

Meanwhile, a holistic nursing approach of ICU delirium assessment was found to be an effective supplement to the use of a screening instrument. First, nurses' attentive presence and their continuity of compassionate care make it possible to early detect any subtle signs of

delirium, such as incoherent mumbling, a tense bodily position, or even a watchful gaze (Granberg-Axèll & Bergbom, 2020). Second, comprehensiveness of professional nursing care ensures delirium assessment goes beyond scoring a screening tool; rather, it is an individualized analysis looking at the patient as a whole. Simply, no patients are identical; thus, similar scoring results can represent distinct risks for developing delirium or indicate different levels of suffering that require differentiated care. In addition to the use of a screening tool, comprehensive nursing assessment enables nurses to implement risk stratification strategies to prioritize nursing care and resources to those who are at a higher risk (Solà-Miravete et al., 2018). In this regard, a holistic nursing approach enriches ICU delirium assessment. It not only makes the interpretation of delirium screening score more clinically relevant but also paves a foundation for more personalized patient care.

This review suggested that nurses' experience of pharmacological treatment of ICU delirium was suboptimal because they felt there were only limited options with questionable effectiveness. This finding is consistent with the lack of evidence to treat delirium effectively with pharmacological agents (Barbateskovic et al., 2019, 2020; Serafim et al., 2015). Not surprisingly, the current guidelines do not recommend routinely using any agents to treat ICU delirium, except that only the use of dexmedetomidine is conditionally recommended with low quality of evidence for delirium in the settings of mechanically ventilated adults with agitation that precludes their weaning and extubation (Devlin et al., 2018). "In critically ill . . ., existing evidence does not support the use of pharmacologic approaches to manage delirium"; instead, providing nonpharmacological supportive care and correcting the underlying causes of delirium are still the conventional treatment of delirium (Campbell & Khan, 2020, p. 218). Therefore, potential effective pharmacological treatment options rely on a better understanding of the pathophysiology of delirium and future breakthrough research in the area.

Regarding the nonpharmacological approach, nurses believed family involvement was important and should be encouraged. This matches the F component (family engagement and empowerment) of the mainstream ABCDEF bundle for ICU liberation (Balas et al., 2019; Ely, 2017). Family presence plays an important role in ICU delirium prevention and management. The presence of a familiar face helps patients to orientate, strengthens their cognitive perception of reality, and offers psychological comfort. If guided appropriately, family presence can contribute to minimizing the use of restraints and decreasing nurses' stress and workload. Beyond being present at the bedside, family members are reported to have an interest in participating in ICU care and delirium prevention (Smithburger et al., 2017). They can be engaged in partnership as informal caregivers to have a higher level of family involvement and take part in limited patient care activities to assist in ICU delirium management. However, it is worth mentioning that family members are generally laypersons for health care, thus, ongoing coaching is important to develop their skills in patient care activities. Also, family members' well-being needs to be supported because they are the focus of family-centered care as well. Currently, a limited number of related studies in general patient care settings suggested some positive outcomes of delirium interventions implemented by family caregivers, such as reduced length of hospital stay and decreased family anxiety (McKenzie & Joy, 2020; Mitchell et al., 2017). It will be interesting to see more research becoming available in this growing area, especially those exploring the effect of family involvement on ICU delirium reduction.

Along with ICU patients' negative experience of delirium as "a perturbing altered reality" (Gaete Ortega et al., 2020, p. 198), there were also unpleasant components in ICU nurses' overall experience of delirium care: they may suffer from emotional exhaustion and physical fatigue. This experience, however, was not unique to the ICU nurses, and it was also reported by nurses from other settings (Mossello et al., 2020). In

acute care, nurses were found experiencing threefold of the burden when caring for delirious patients: symptom burden (e.g., disorientation and impaired communications), emotional burden (e.g., distress and frustration), and situational burden (e.g., loss of control and safety concerns) (Schmitt et al., 2019). Part of nurses' distress came from the inability of building trustful relationships with patients as well as the increased workload that was time-consuming and required a team effort to prevent patient and staff injury (Brooke & Manneh, 2018; Kristiansen et al., 2019). Also, nurses working in palliative care experienced frustration and uneasiness when looking after patients with a terminal illness who suffered from delirium that linked to poor prognosis (Waterfield et al., 2018). In this sense, nurses who care for patients with delirium may require some formal or informal on-job peer and management support to alleviate their distress and promote their well-being. Creating a supportive work environment through teamwork will also be beneficial. Interestingly, one finding of this review that ICU nurses perceived delirium management as a low priority was not reported in the studies conducted in other nursing care settings. This finding, however, was echoed by patient relatives' perception of ICU delirium care, of which the relatives observed delirium care did not appear to be the main concern and was secondary to life and death in the ICU (Bohart et al., 2019).

IMPLICATIONS

Several implications for practice emanate from the findings of this review. First, given the high incidence of ICU delirium and its adverse consequences, multicomponent prevention strategies should be adopted and strengthened to minimize its occurrence. Due to the compassionate and holistic nature of nursing, nurses are ideal in coordinating preventive interventions. Second, both the use of screening tools and nursing assessment are integrated delirium detection components. The former provides objective measurement to facilitate interdisciplinary communication, and the latter supplies subjective content to individualize patient care. Third, compared to pharmacological interventions, nonpharmacological measures with family involvement should be the focus of ICU delirium management. Last, caring for delirious patients in the ICU can be a distressing experience for nurses. Support from peers and management will be beneficial for staff well-being.

This review also suggests that future research is needed to explore areas such as developing multicomponent nonpharmacological focused delirium management protocols, barriers to implementation delirium interventions, family involvement in delirium care, as well as nursing leadership in coordinating a multidisciplinary delirium management team.

LIMITATIONS

Several limitations of this review are important to consider. First, the findings of qualitative studies are grouped and reported as themes, thus other nontheme-related findings may have been filtered out by original authors. This inherent problem may narrow the findings of the review. Second, the nine studies reviewed were conducted in ICUs across seven countries. The diversity of settings may interfere with the emergence of new themes. Third, three out of the nine reviewed studies were focused mainly or partially on the CAM-ICU screening tool. This may skew the findings of the review toward ICU delirium assessment and, specifically, the CAM-ICU tool. Finally, the literature screening was conducted by one author only. Although the results of all screening steps were reviewed and approved by the other three authors, the screening process may be subject to study selection bias.

CONCLUSION

This review synthesized intensive care nurses' experiences of caring for patients with delirium into 12 descriptive themes that can be grouped into four aspects of ICU delirium management: prevention, assessment, treatment, and the overall impression. To enhance nursing care of delirium in the ICU, four implications for practice were suggested: strengthening multicomponent

delirium prevention strategies, integrating the use of screening tools and nursing assessment for delirium detection, focusing on nonpharmacological interventions, and offering on-job support to nurses who care for delirious patients in the ICU. Future research is needed to explore areas such as developing multicomponent nonpharmacological focused delirium management protocols, barriers to implementation of delirium interventions, family involvement in delirium care, as well as nursing leadership in coordinating a multidisciplinary delirium management team.

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