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Research article

Trends and recommendations for critical care nursing research in the Nordic countries: Triangulation of review and survey data

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ABSTRACT

Background: Priorities for critical care nursing research have evolved with societal trends and values. In the 1980s priorities were the nursing workforce, in 1990s technical nursing, in 2000s evidence-based nursing and in 2010s symptom management and family-centred care.
Objectives: To identify current trends and future recommendations for critical care nursing research in the Nordic countries.
Methods: We triangulated the results of a literature review and a survey. A review of two selected critical care nursing journals (2016–2017) was conducted using content analysis to identify contemporary published research. A self-administered computerised cross-sectional survey of Nordic critical care nursing researchers (2017) reported current and future areas of research.
Results: A review of 156 papers identified research related to the patient (13%), family (12%), nurse (31%), and therapies (44%). Current trends in the survey (n = 76, response rate 65%) included patient and family involvement, nurse performance and education, and evidence-based protocols. The datasets showed similar trends, but aftercare was only present in the survey. Future trends included symptom management, transitions, rehabilitation, and new nursing roles.
Conclusion: Critical care nursing research is trending toward increased collaboration with patient and family, delineating a shift toward user values. Recommendations include long-term outcomes and impact of nursing.

Background

Critical care nursing research is a growing field with an increasing number of sub-specialty journals and rising journal impact factors (Oermann and Jenerette, 2013; Cortegiani et al. 2019). During the past decades, a number of studies have mapped present and future areas of research in intensive and critical care adult and paediatric nursing to promote coordination, collaboration and harmonisation (Leino-Kilpi and Suominen 1997, Lopez, 2003, Blackwood et al. 2011, Tume et al. 2014, Oczkowski et al. 2017, Roney and McKenna 2018). Most of the studies used Delphi methodology to rank research priorities. The American Society of Critical Care Nurses (AACN) published priorities for critical care nursing research as early as the 1980s and 1990s (Lindquist et al. 1993). In the 1980s seven of the top 15 areas of research were

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related to the nursing workforce, such as nursing recruitment (Riegel et al. 1993), whereas the top five ranking issues in the 1990s were related to technical nursing, including pulmonary function, ventilator weaning, haemodynamics, tissue perfusion/oxygenation and nutritional support (Lindquist et al. 1993).

In 2003 a Delphi study described critical care nursing priorities in Hong Kong (Lopez, 2003). The research domains were categorised in order of frequency as: patient care, family care, health promotion/prevention, nursing concerns, alternative interventions and technological concerns. This was, perhaps, an indication of the shift from technical to more humanistic critical care nursing. A Delphi study conducted in 2006–2009 uncovered research priorities in 20 European countries (Blackwood et al. 2011). The results were 52 research topics organised in 12 domains. Five main areas dominated the study: patient safety, impact of evidence-based practice on outcomes, impact of workforce on outcomes, wellbeing of patients and relatives and impact of the end-of-life care on staff and practice. This study illustrated contemporary trends toward evidence-based practice, wellbeing of patients and relatives, and outcomes. It was concluded that the study provided a platform for future research to improve clinical practice and care of intensive care patients.

Similarly, an e-Delphi study was conducted in 2012–2013 to uncover research priorities in European neonatal intensive care nursing research (Wielenga et al. 2015). The study resulted in 43 research statements in eight domains. The highest-ranking statements were related to reduction of pain, medication errors, end-of-life care, needs of parents and family, and implementing evidence into nursing practice. The eight research domains were ranked as pain and stress, family-centred care, clinical nursing care practices, quality and safety, ethics, respiratory and ventilation, infection and inflammation and professional issues in neonatal intensive care nursing. This study illustrated an increased interest in symptomatology and family welfare. It was concluded that the study might support the development of a common research strategy in European neonatal nursing research.

In the United Kingdom (UK), the James Lind Alliance Priority Setting Partnership conducted a modified Delphi survey and review to jointly identify and prioritise unanswered questions about adult intensive care according to patients, family and staff (Arulkumaran et al. 2016). The top three prioritised areas of research were early identification of patients that might benefit from intensive care, support of patients and their families as they start living at home again, and the best way to identify patients with or at risk of, delirium or agitation.

In summary, many studies have described research strategies and priorities, but few have provided a description of trends and recommendations to guide future research. The aim of the present study was to identify current trends and future recommendations for critical care nursing research in the Nordic countries. We use the term critical care nurse to describe nurses that work in all areas of adult, paediatric or neonatal intensive or critical care units, including sub-specialties, such as burns or trauma.

Methods

Our study used a descriptive comparative design triangulating data from two sources to capture current trends and future recommendations for critical care nursing research. Our design combined a retrospective review of selected literature and a prospective survey of active researchers to inform the aim of our study. We present the two studies separately before we describe our triangulation strategy.

Literature review

We pragmatically selected two journals that are widely used by Nordic intensive care nurse researchers to represent contemporary areas of research: Intensive and Critical Care Nursing (Elsevier) and Nursing in Critical Care (Wiley). The journals were selected to identify studies that were nurse-led to tease out issues of importance to nurses. Eligibility: We included only original research and reviews published in 2016 and 2017. Exclusion: We excluded editorials, guest editorials, practice development, and conference information. Initial extraction was performed by the first author. Included papers in the two journals within our timeframe were analysed by the first author and subsequently by the last author using manifest content analysis (Vaismoradi et al. 2013). The method was chosen to enable both qualitative and quantitative description of data. Using NVivo computer software version 12, we categorised the titles of each publication deductively within four main domains informed by the literature: Patient, Family, Nurse and Therapies (i.e. nursing interventions). We subsequently coded research topics inductively within each domain expanding and collapsing the subcategories to provide an overview of contemporary areas of research.

Survey

In 2017, we conducted a prospective cross-sectional, self-administered online survey targeting research-active critical care nurses and members of the Nordic Association for Intensive Care Nursing Research (NOFI) (Egerod 2011). The study group developed the survey based on topics identified in the Delphi study describing research priorities of adult intensive care nurses in 20 European countries (Blackwood et al. 2011).

Development: The English language survey included 80 items in eight sections related to: 1) Demographics (items 1–9), 2) Patient wellbeing *in ICU* (items 10–32), 3) Patient wellbeing *after ICU* (items 33–43), 4) Family (items 44–51), 5) Workforce (items 52–58), 6) The unit (item 59–63), 7) Education (64–69), 8) Selected therapies (item 70–79), and Additional comments (item 80). Each section contained closed questions on current areas of research (yes or no), followed by free text to describe current research and provide recommendations for future research. The survey was piloted by six critical care nurses and revised before distribution.

Distribution: We obtained a mailing list of Nordic critical care research nurses through the board members of the NOFI network who contacted potential participants. Invitations to participate in the survey were distributed online with a covering letter explaining the purpose of the study. Surveys were linked to the invitation using SurveyXact (www.surveyxact.com). Two reminders were emailed with two-week intervals. Finland and Iceland were not initially members of NOFI. The network was established in 2004 for critical care nurse researchers in Denmark, Norway, and Sweden (Egerod 2011). Members in the three founding countries were able to understand each other's languages and agreed that communication should be kept in Nordic languages rather than English. We used English in this survey to enable inclusion of researchers from Finland and Iceland, but inclusion was limited because the network had not been established in these countries.

Analysis: The main items in the survey were analysed using descriptive statistics (frequencies and percentages) and free-text (narrative) responses were analysed by frequency and qualitative content analysis. Data were automatically available in SPSS (Statistical Package for the Social Sciences) for analysis.

Triangulation strategy

The literature review offered a snapshot of *published current research* in critical care nursing (dataset I), and the survey offered a combination of *reported current research* (dataset II) and reported recommendations for future research (dataset III). We compared

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dataset I and II to verify topics of contemporary research from two sources to see if they converged toward the same results. We then compared dataset I and II with dataset III to investigate trends in critical care nursing research, Fig. 1.

Ethical considerations

The NOFI board members contacted members of the network, respecting General Data Protection Regulations (GDPR). In the covering letter, respondents were informed of the aim of the study and assured anonymity and confidentiality. It was explained that by completing and submitting the survey the respondents were voluntarily giving their consent to participate in the survey and to the publication and dissemination of results. The survey contained no personal identifiers, and consequently did not need further approval according to the Danish Data Protection Agency and the Danish National Committee on Health Research Ethics. This was accepted in all countries as data were handled in Denmark.

Results

Areas of current research published in selected literature

The literature review included 144 articles in Intensive and Critical Care Nursing and 176 articles in Nursing in Critical Care in 2016–2017 (n = 320). We excluded 163 articles that did not meet the inclusion criteria and selected 156 articles for our study (Fig. 2). If a title covered more than one topic, we allowed double coding, meaning the total number of tags might be less than the sum of individual tags. We coded deductively within four categories yielding 258 tags (codes) from the two sources related to: 1) Patient (33 tags, 13%), 2) Family (32 tags, 12%), 3) Nurse (81 tags, 31%), and 4) Therapies (112 tags, 44%). The distribution of research designs was: cross-sectional (surveys) 61%, quality improvement 16%, longitudinal 10%, case studies 7%, action research 1%, and mixed methods 1%. The distribution of research methodologies was quantitative (non-surveys) 34%, qualitative 33%, surveys 24%, and literature reviews 9%. The content was coded inductively within the four main categories: Patient, Family, Nurse, and Therapies.

Areas of current and future research reported in the survey

The survey was emailed to 117 active critical care nurse researchers in the Nordic countries of which 76 responded (response rate 65%). We included surveys with incomplete responses. Results were reported within the following categories: demographic characteristics, research related to patient wellbeing in ICU and after ICU, family, workforce, nurse education, and therapies.

The respondents included 71 females and five male nurses, from Norway 33%, Sweden 30%, Denmark 28%, Finland 5%, and Iceland 4%. The typical respondent was an experienced, well-educated woman holding an academic position in the clinic or college/university. Most (61%) were older than 50 years of age and most (88%) had more than 10 years of clinical experience; 25% had more than 20 years of experience. About 40% were master's prepared and 60% held a PhD-degree. The current positions of the respondents ranged from clinical nurse specialist (43%) to post-doctorate (23%), assistant/associate professor (26%) and professor (8%).

The results of sections 2–8 are presented in Tables 1 and 2. The most frequently reported areas of current research are summarised as patient and family experience (symptoms and suffering), patient and family involvement, nurse performance, education, workload and impact, and development of evidence-based protocols and specialisation in Europe (Table 1).

The most frequently recommended areas of future research are summarised as: symptom management, communication with non-sedated ICU patients, rehabilitation and management of

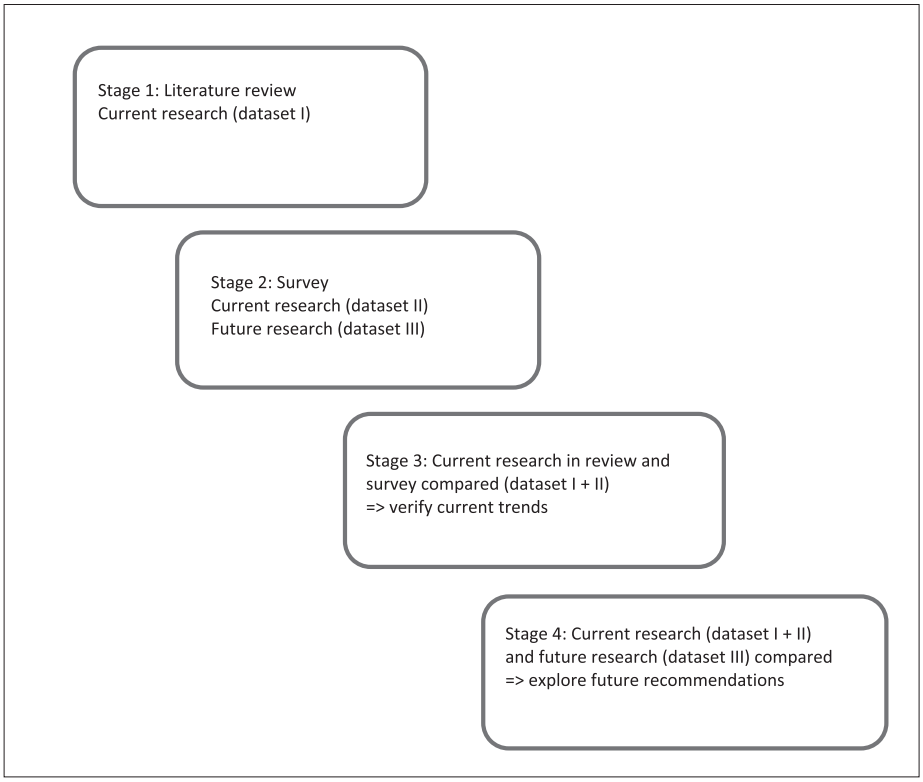

Fig. 1. Stages of analysis.

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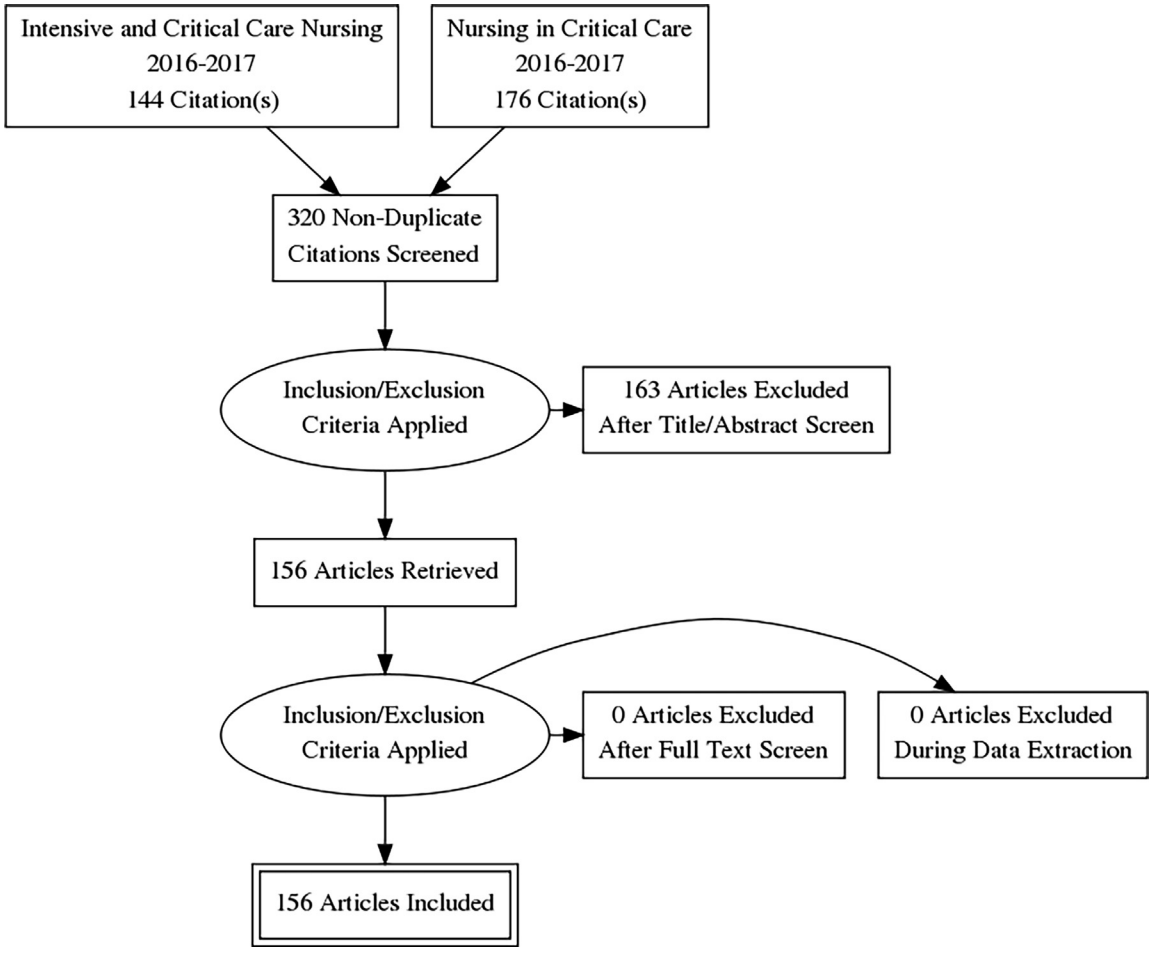

Fig. 2. PRISMA flow diagram.

Table 1
Stage 2 Areas of current research reported in the survey (dataset II).

	Current areas of research (frequency)	Current areas of research (free text)
Research related to the patient– in ICU	Patient experience of ICU (64%) Symptoms (41%), Delirium and agitation (38%), Anxiety, Communication (37%) Sleep and rest (34%), Pain and discomfort (33%), ICU diary (25%) Sedation practice and non-sedated patients (22%) Early mobilisation (21%), Thirst (20%) Ethical issues (18%), Complementary therapies (16%) Pressure ulcers, End-of-life decisions (11%) Critical incidents (9%), Physical restraints (7%) Nutrition and fluids (5%), Elimination (4%)	Dynamic/cycled lighting, improved ICU environment, noise reduction, patient needs, patient privacy, restricted visiting, rocking chair therapy, sleep promotion, and tactile massage. Increased patient safety, early warning score, and rapid response teams.
Research related to the patient – after ICU	Patient experience (61%) ICU follow-up and drop-in programs (42%) Rehabilitation and psychological aftercare (39%) Short and long-term cognitive outcomes (35%) Short and long-term physical outcomes (32%) Transitions from ICU and hospital (21%)	Sense of coherence after ICU, short and long-term recovery, transitions, follow-up consultations, home mechanical ventilation
Research related to the family	Family experience (49%) Family involvement in care (30%) Family-patient communication (25%) Family suffering (anxiety, depression, PTSD) (20%) Daily life after ICU (work and social inequality) (18%) Family bereavement follow-up (18%)	Follow-up consultations, family needs, children as visitors, family involvement and support, end-of-life decisions, bereavement care in and after ICU, family caregiver burden, parents' experience of critical premature infant

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Table 1 (*continued*)

	Current areas of research (frequency)	Current areas of research (free text)
Research related to the workforce	Nurse workload and impact (13%) Nurse-patient ratio and impact (10%) Nurse leadership and staffing (6%) Nurse burn-out and violence (3%) Nurse retention and attrition (1%)	Better staffing and education, competencies, communication skills, ethical issues, roles, recruitment, management and organisation
Research related to the ICU	ICU environment (noise, light, disturbance, music, visiting, circadian rhythm) (27%) Nurse-physician communication (20%) Digital solutions in ICU (6%)	Prevention of violence, noise management
Research related to nurse education	Development of evidence-based protocols (23%) Education related to patient outcomes (13%) Autonomy related to patient outcomes, development of European ICU nursing curriculum (7%)	Clinical training of ICU nursing students, training and follow-up of ICU-nurses as preceptors/supervisors, instructors' experience of mentoring in ICU, quality indicators to audit clinical adherence, individualised education, comparing ICU specialisation in Europe
Research related to therapies	Patient resuscitation outcome (13%) Mechanical ventilation, VAP, nurse-led weaning (11%) Haemodynamics, infections, family presence during resuscitation (7%) Sepsis prevention, Endotracheal suctioning (3%)	Nurse-led mobilisation, resource management, critical ICU admission

Table 2
Stage 2 Areas of future research reported in the survey (dataset III).

	Recommendations for future areas of research (free text)
Research related to the patient – in ICU	Symptom management (agitation, anxiety, pain, thirst, sleep), non-sedated patients, nurse-patient interaction, patient-centred care, patient comfort, patient participation and involvement
Research related to the patient – after ICU	Rehabilitation and psychosocial consequences of critical illness, body image, inequality, transitions, ICU aftercare, tele-ICU and tele-counselling
Research related to the family	Family-centred care, family caregiver burden, family involvement, informational needs, bereavement support and effect of family suffering on patient
Research related to the workforce	Nurse competencies and qualifications, leadership and staffing, burn-out, retention, and attrition. Resilience training, peer-to-peer supervision, nurse-patient interaction
Research related to the environment	Improved ICU architecture, relevant sensory stimulation (sound, smell, vision, vibration, touch)
Research related to nurse education	Issues related to the transition to academic positions and advanced practice
Research related to therapies	Cognitive stimulation, delirium management, early mobilisation, early warning score, humanising critical care, ICU environment, ICU follow-up and aftercare clinic, mechanical ventilation, non-pharmacolovical interventions (dynamic lighting, music, rest periods, improved sleep with ear plugs and eye patches), nursing outcomes, nutrition and elemination, optimising ICU trajectory, patient transition to ward and home, quality indicators, safety in ICU, transcultural care

psychosocial consequences of critical illness, family-centred care, nurse competencies, qualifications and impact, ICU environment and non-pharmacological therapies (Table 2).

Triangulation of results

After collapsing the eight sections of the survey into the four domains of the review, we compared published (dataset I) and reported (dataset II) areas of current research (Table 3). The topics in the four main domains were similar in the two datasets. The review, however, did not reflect reported research on aftercare (physical and psychosocial outcomes after ICU). The survey showed more activity in rehabilitation and post-ICU care, such as patient and family follow-up consultations, short and long-term recovery after ICU, patient transitions and home mechanical ventilation.

Current research (dataset I and II) and future recommendations (dataset III) were compared. The following trends were identified within the four domains: 1) Patient wellbeing moving toward more active, comfortable, and empowered patients, 2) Family wellbeing moving toward family empowerment and bereavement support, 3) Nurse wellbeing moving toward better education, more competencies, and collaboration with patient and family, and 4) Therapies moving toward supporting patient empowerment, personhood, culture and cognition. The survey recommended future research in relation to: patient comfort and symptom management, family involvement and end-of-life decisions, nursing skills, competencies, management and transition to academic positions, and therapies promoting patient and family-centred care and involvement, post-ICU rehabilitation with psychosocial and cognitive assessment and follow-up, family response to patient illness, and improved ICU environment (Table 4).

Discussion

This triangulated study offered a snapshot of trends in current and future areas of critical care nursing research. Our main findings suggested a shift from technical nursing toward an increased focus on patient understanding, and patient and family involvement in treatment and care. Current research appears to have a sharper focus on the patient experience of symptoms than the clinical signs of disease. There is an increasing interest in acknowledging the family's suffering and conducting research on long-term consequences of critical illness. Nursing burn-out and under-staffing are investigated with a trend toward improved nursing education and competencies. Current research areas include the development of evidence-based protocols and harmonising critical care nurse (CCN) specialisation across Europe.

Interestingly, the published papers in our study did not match the reported research on ICU rehabilitation and aftercare. The areas of research reported in the survey were similar to the elements described in the Post Intensive Care Syndrome (PICS) and PICS-

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Table 3
Stage 3 Areas of current published and reported research compared.

Main domains	Literature review (dataset I): published research areas in order of frequency	Tags[1]	Survey (dataset II): reported research areas in order of frequency	%[2]
Patient	Delirium and agitation	12	Patient experience	(64%)
	Patient experience	8	Symptoms	(41%)
	Symptoms	8	Delirium and agitation	(38%)
	Patient participation and involvement	4	Communication	(37%)
	Non-sedated patients	1	Sleep and rest	(34%)
Family	Family experience	11	Family experience	(49%)
	Family responses and needs	8	Family involvement	(30%)
	Family stress and satisfaction	5	Family-patient communication	(25%)
	Family involvement	5	Family suffering and inequality	(20%)
	Children as visitors	2	Family bereavement follow-up	(18%)
	Bereavement	1		
Nurse	Nurse performance and knowledge	41	Nurse workload and impact	(13%)
	Nurse staffing/workload/burnout	18	Nurse-patient ratio and impact	(10%)
	Nurse experience and perception	16	Nurse leadership and staffing	(6%)
	Nurse ethics	3	Nurse burn-out and violence	(3%)
	Nurse management and organisation	3	Nurse retention and attrition	(1%)
Therapies	Physiological interventions	17	ICU environment	(27%)
	End-of-life decisions	12	Evidence-based protocols	(23%)
	Complementary/non-pharmacological	10	Nurse-physician communication	(20%)
	ICU-diary	9	Patient resuscitation outcome	(13%)
	Infection/sepsis	8	Ventilator associated pneumonia, nurse-led weaning	(11%)
	Mobilisation	7	Decision-making,	(7%)
	Ventilation	7	European ICU nursing curriculum, hemodynamic monitoring, family	(6%)
	Sedation	7	presence during life support digital solutions	(3%)
	Rapid response and early warning	6	Endotracheal suctioning,	
	Nutrition and elimination, communication, pressure	5	Preventing sepsis	
	ulcers/skin care	5		
	Obesity care	5		
	Digital solutions	4		
	Critical incidents/patient safety, Rehabilitation/post-	4		
	ICU/transfers/transitions/trajectories	2		
		2		
		2		

Tags[1]: In order of frequency of publication
%[2]: Percent that answered 'yes' to the topic

Family (Needham et al. 2012). The lack of studies describing the consequences of critical illness in our literature review can, perhaps, be explained by the type of studies that are submitted to journals with higher journal impact factor, interdisciplinary, or medical journals. While we purposely selected two journals that reflected nurse-led research, we might have overlooked journals publishing randomised controlled trials. As such, ICU research is growing more democratic, collaborative and interdisciplinary (Vincent and Creteur 2015).

The survey offered recommendations for future areas of research that included elements of patient care that are described in the ABCDEF-bundle (Pun et al. 2019, Needham et al. 2012). As such, the survey did not identify novel areas of research but gave direction to critical care nursing research ensuring core issues in nursing and societal trends. More evidence is needed to provide guidelines for the best care and outcomes consistent with contemporary patient and family values.

Recommendations for future research included awake and conscious mechanically ventilated patients, nurse-patient interaction, family-centred care, and patient participation and involvement. These recommendations reflect contemporary practice in Nordic ICUs with a history of lighter sedation and subsequent role-changes in patients and staff, discouraging paternalism and encouraging empowerment (Laerkner et al. 2015, Laerkner et al. 2017, Egerod et al. 2013, Karlsson et al. 2012). The recommendations concur with an increasing focus on shared decision-making with patients and their families in healthcare in general (Steffensen et al. 2018). As such, shared decision-making has been shown to improve outcomes for disadvantaged patients (Durand et al. 2014). The changing values toward equality acknowledge children as visitors (MacEachnie et al. 2018) and family caregivers as pivotal to patient recovery (Arulkumaran et al. 2016). The trend toward equality is not unique to the Nordic countries but might reflect cultures embracing autonomy of nurses, patients and family members (Egerod et al. 2013).

The boundaries of critical care nursing are expanding from the patient as the centre of attention to the family, and even the bereaved (Davidson et al. 2017, Egerod et al. 2018). The study by Arulkumaran et al. (2016) investigated research priorities in critical care by professional background and showed that patient and relatives suggested research topics to which they could relate, whereas clinicians provided a greater breadth of topics. When deciding future areas of research, it is important to include different perspectives to ensure that real-life and clinical issues and values are represented, including transcultural issues.

Although many papers have been published on research priorities in critical care nursing, the studies are difficult to compare due to heterogeneous ways of delineating the field. Each study varies in number and type of research domains, areas and topics. A prerequisite for reliable description of trends and priorities is standardised and consistent reporting of research.

Limitations

We constructed our survey with 80 items within eight sections. During analysis we realised that the survey was overly complex and recommend a simpler format in the future to minimise the risk of obscuring essential themes by an abundance of details. We rea-

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Table 4
Stage 4 Areas of current and future research compared.

	Current research (dataset I + II)	Future research (dataset III)
Patient	awake patients communication delirium and agitation patient experience patient participation and involvement sleep and rest symptoms	awake and conscious patients body image nurse-patient interaction patient-centred care patient comfort patient participation and involvement symptoms and symptom clusters
Family	bereavement children as visitors in ICU end-of-life decisions family experience family involvement family responses and needs family stress or satisfaction	children as visitors in ICU end-of-life decisions family-centred care family involvement family support family caregiver burden
Nurse	ethical issues nurse communication skills nurse experience and perception nurse management and organisation nurse performance and knowledge nurse staffing/workload/burnout nurse retention and attrition nurse workload and impact	ethical issues nurse communication skills nurse management nurse performance and knowledge nurse staffing/workload/burnout nurse transition to academic role
Therapies	critical incidents/patient safety decision-making digital solutions end-of-life decisions endotracheal suctioning European ICU nursing curriculum evidence-based protocols family presence during life support hemodynamic monitoring ICU environment ICU-diary infection/sepsis mobilisation, ventilation, sedation non-pharmacological interventions nurse-led weaning nurse-physician communication nutrition and elimination, communication optimising ICU trajectory patient outcomes physiological interventions pressure ulcers/skin care rapid response and early warning rehabilitation/post-ICU ventilator associated pneumonia	cognitive stimulation delirium management early mobilisation early warning score effectiveness of nursing interventions humanising critical care ICU environment ICU follow-up and aftercare clinic mechanical ventilation non-pharmacolovical interventions (dynamic lighting, music, rest periods, improved sleep with ear plugs and eye patches) nutrition and elemination optimising ICU trajectory patient transition to ward and home quality indicators safety in ICU transcultural care

lised during analysis that our results might be biased by our choice of journals and by reviewing only two journals. If we had chosen journals with a higher journal impact factor, we might have found more nurse-led randomised clinical trials. The survey did not include information on the type of units represented by the respondents, e.g. adult, paediatric or neonatal. This would have provided more information but would also have added to the complexity of the survey. Although most studies of critical care *research priorities* are conducted using Delphi methodology, we chose a combination of review and survey to describe *trends and recommendations*. The strength of Delphi methodology is the collection and aggregation of expert knowledge and statistical analysis of results, while the downside is reliance on estimates rather than empirical data (Donohoe et al. 2012). Using published studies as a source of data offered a picture of actual research, albeit inconclusive unless a rigorous systematic literature review is undertaken. We had a fair response-rate in our survey. We realize that this was a small study and that the evidence of our findings is weak. We do, however, believe it provided an adequate snapshot of trends in Nordic critical care nursing research. We increased the trustworthiness of our study by triangulating our data and using well established research methodology.

Conclusions

This triangulated study combining review and survey data provided an overview of current areas of research and recommendations for future research in critical care nursing. Critical care nursing research is trending toward better patient understanding and collaboration with patient and family, delineating a shift toward user values. In the future, more research is recommended on the consequences of critical illness and the impact of critical care nursing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

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Ethical statement

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Implications for clinical practice

- A dialectic relationship exists between critical care research and practice. Clinical practice feeds research and vice versa.
- Looking back, critical care nursing research has evolved during the past four decades from a focus on the nursing workforce, to technical nursing, evidence-based nursing, and currently symptoms and family-centred care.
- Contemporary critical care nursing research is trending toward better patient understanding and collaboration with patient and family, delineating a shift toward user values.
- Future research recommendations include increasing our knowledge on the consequences of critical illness and the impact of critical care nursing.

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