BMC Palliative Care

RESEARCH

Open Access

Barriers in providing quality end-of-life care as perceived by nurses working in critical care units: an integrative review

Yousef Saleh Rubbai[1,2*], Mei Chan Chong[1*], Li Yoong Tang[1], Khatijah Lim Abdullah[3], Walid Theib Mohammad[6], Samira Mohajer[1,4] and Mohammad Namazinia[5]

Abstract

Background Despite increasing interest in quality end-of-life care (EOLC), critically ill patients often receive suboptimal care. Critical care nurses play a crucial role in EOLC, but face numerous barriers that hinder their ability to provide compassionate and effective care.

Methods An integrative literature review was conducted to investigate barriers impacting the quality of end-of-life care. This review process involved searching database like MEDLINE, Cochrane Central Register of Controlled Trials, CINAHL, EBSCO, and ScienceDirect up to November 2023. Search strategies focused on keywords related to barriers in end-of-life care and critical care nurses from October 30th to November 10th, 2023. The inclusion criteria specified full-text English articles published between 2010 and 2023 that addressed barriers perceived by critical care nurses. This integrative review employs an integrated thematic analysis approach, which combines elements of deductive and inductive analysis, to explore the identified barriers, with coding and theme development overseen by the primary and secondary authors.

Results Out of 103 articles published, 11 articles were included in the review. There were eight cross-sectional descriptive studies and three qualitative studies, which demonstrated barriers affecting end-of-life care quality. Quality appraisal using the Mixed Method Appraisal Tool was completed by two authors confirmed the high credibility of the selected studies, indicating the presence of high-quality evidence across the reviewed articles. Thematic analysis led to the three main themes (1) barriers related to patients and their families, (2) barriers related to nurses and their demographic characteristics, and (3) barriers related to health care environment and institutions.

Conclusion This review highlights barriers influencing the quality of end of life care perceived by critical care nurses and the gaps that need attention to improve the quality of care provided for patients in their final stages and their fsmilies within the context of critical care. This review also notes the need for additional research to investigate the uncover patterns and insights that have not been fully explored in the existing literature to enhance understanding

*Correspondence:
Yousef Saleh Rubbai
y_rubbai83@yahoo.com
Mei Chan Chong
mcchong@um.edu.my

Full list of author information is available at the end of the article

of these barriers. This can help to inform future research, care provision, and policy-making. Specifically, this review examines how these barriers interact, their cumulative impact on care quality, and potential strategies to overcome.

Keywords Barriers, Quality end-of-life care, Nurses, Critical care units

Introduction

It was estimated that 56.8 million people, including 25.7 million at the end of life, need palliative care; however, only about 14% of people who need palliative care currently receive it [1]. The need for acute care settings increased in response to life-threatening emergencies and the acute exacerbation of diseases [2, 3]. These settings were developed to meet the need for providing optimal health care, saving patient lives and decreasing the rate of mortality using advanced technology [2, 4]. Caring in intensive care units sometimes involves withholding or withdrawing treatments that have lasted a lifetime, and in these cases, the role of ICU nurses goes from providing life-saving measures to end-of-life care [5]. Care at the end of a life is a special kind of health care for individuals and families who are living with a life-limiting illness [6]. End-of-life care (EOLC) includes a crucial component of intensive care nurses' work; nurses are in a unique position to cooperate with families to provide care for patients at the end of their lives [7–1043].

Advanced technology in critical care units has led to improved nursing care in many areas, such as End-Of-Life-Care (EOLC) [11]. This type of care has moved towards enhancing comfort and reducing patients' suffering [12]. As EOLC involves enhancing the physical, emotional, and spiritual quality of life for critically ill patients, traditional measures are now challenged as advanced technology has revolutionized nursing care through innovations such as adjustable beds and pressure-relieving mattresses, which help optimize patient comfort, and advanced communication technologies, for example, video conferencing facilitating communication between patients, families, and healthcare providers, allowing for ongoing support, counseling, and decision-making discussions throughout the end-of-life journey. Therefore, quality EOLC has become a significant concern for healthcare decision-makers, healthcare providers, researchers, patients, and families [13]. Despite the increased interest and demand in providing good EOLC, this care is still limited In the critical care and does not meet the recommended standards [14]. Critical Care Nurses spend more time with patients compared to other members of the multidisciplinary team. They serve as implementers, educators, and coordinators in end-of-life care. Their role in delivering EOLC is essential as they are presumably prepared to provide this care and meet patients and their family's needs, including pain control, management of physical, emotional, spiritual, and social needs, and communication with patients and their families [15]. Therefore, it is important to look into the factors that impede the provision of quality end-of-life care from their perspectives. Many barriers affecting the provision of EOLC in critical care areas have been reported in the literature [13, 16, 17].

End-of-life care (EOLC) involves caring for and managing terminally ill patients and families. The quality of EOLC in critical care units has been evaluated based on factors such as patient/family involvement in decision-making, professional communication between health professionals and patients/families, care quality, support types, illness and symptom management, spirituality, and organizational support for critical care nurses [18]. Furthermore, working in a critical care unit environment is stressful and emotionally taxing for health professionals such as nurses. Carers of terminally ill patients may experience distressing emotions such as helplessness, loss of power, sadness, and hopelessness [18]. These feelings make it difficult to provide optimal end-of-life care. Additionally, nurses focus on managing symptoms, disease prognosis, treatment options, and physical aspects, but in fact, caring in critical care units follows a universal and holistic model. Previous research has shown that patients and families are not receiving adequate care at the end of life.

Researchers categorized factors that affect EOLC into barriers and challenges [13]. Barriers have been classified into three categories: patient and family-related, nurses and other health care workers' related, and health care institutions' related [16, 17].

Barriers related to communication between health care providers and patients and families and characteristics of critical care nurses, including nurses' age, gender, educational level, and end-of-life care training, significantly affect providing good EOLC [19–23]. this integrative review aims to go beyond merely identifying and categorizing barriers. By synthesizing results from a wide range of studies, the review seeks to uncover patterns and insights that have not been fully explored in the existing literature to enhance understanding of these barriers. This can help to inform future research, care provision, and policy-making. Specifically, this review will examine how these barriers interact, their cumulative impact on care quality, and potential strategies to overcome Despite the fact that EOLC is decisive to patient care, appropriate provision of this service is still lacking in several aspects. In the ICUs, EOLC must be considered an essential factor. However, owing to the existing practices of nurses,

the adequate delivery of EOLC tends to bear various inefficiencies.

Nurses and other healthcare staff seem to come across multiple barriers that hinder their ability to offer effective care to critically ill patients. Considering the given dearth of research in this context, we intend to present a comprehensive insight into the issue. In this review, we focused on EOLC provided by critical care nurses, who were defined as nurses dealing with patients suffering from acute health problems due to injury, surgery, or exacerbated chronic diseases and need close monitoring in units such as intensive care units (surgical, medical, and pediatric) and cardiac care units. Due to the importance of exploring these barriers in determining the quality of EOLC, this integrative review paper was conducted to examine and highlight evidence from the literature on these barriers that affect the provision of quality EOLC. This paper explores and identifies current published peer-reviewed studies addressing barriers that affect the quality of EOLC as perceived by critical care nurses. This integrative review seeks to answer the following question: What barriers affect the quality of end-of-life care perceived by nurses working in critical care units?

Methods

An integrative review design was the most suitable method to explore and produce a new understanding from various types of literature (experimental, non-experimental, and theoretical) to enhance understanding of the phenomenon under investigation (i.e., EOLC). This method also facilitated nursing science by informing further research, care provision, and policy-making. It also highlights strengths, weaknesses, limitations, and gaps in knowledge, and supports what is already known about theories relevant to our topic [24]. Therefore, this design helps meet this review's purposes.

Search strategies

The search process involved four phases which were developed by the first author (YR) and validated by two expert authors (MCC and KLA) as follows: (1) identifying the problems related to the research question, (2) conducting a systematic literature search, (3) screening the articles to develop themes, and (4) performing critical analysis to develop the themes.

From October 30, 2023, to November 10, 2023, electronic literature searches were conducted using major databases such as MEDLINE, Cochrane, CINAHL, EBSCO, and ScienceDirect.

Search methods were defined using the MeSH (Medical Subject Headings) descriptors of the keywords "end-of-life care," "barriers," and "critical care nurses." Additionally, the reference lists of all identified articles were manually searched for additional studies. The operators used in this search included "AND" and "OR," as well as the truncation tools of each database. A refined search was performed with terms such as "critical care nurses' perceptions" OR "opinions" AND "quality end-of-life care" OR "quality of death and dying." Subsequently, terms like "barriers" OR "obstacles" OR "challenges" AND "quality end-of-life care" OR "quality of death and dying" were employed. Finally, the descriptors "critical care nurses' perceptions," "barriers," and "quality end-of-life care" were used (Fig. 1).

Inclusion and exclusion criteria

The inclusion criteria for this search to select relevant articles were as follows: (1) Full-text articles, (2) Papers published in the English language from 2010 to 2023, and (3) Articles that specifically describe the barriers perceived by critical care nurses that affect the quality of end-of-life care.

Intervention studies and studies that describe barriers to providing quality end-of-life care from other perspectives, such as physicians and patients' families were excluded. For the studies who included nurses and other health care workers within the context of critical care, the researchers included the results that relevant to nurses and excluded the others.

Data extraction

The data extraction and analysis were carried out to collect and consolidate the data from the selected studies into a standard format relevant to the research field. The extracted data included specific descriptions of the settings, populations, study methods, and outcome measures (Table 31). Two authors (YSR and KLA) independently extracted the data and reached an agreement after discussion with the third author (MCC).

Included and excluded studies

Following the review process, the authors made the final decision on studies that met the study criteria. Out of a total of 103 articles, 9 duplicates were removed. The abstracts of the remaining 94 articles were initially found to be somewhat relevant to the research topic. However, after examining the articles in terms of research methodology and results, 36 articles that matched the selection criteria for this study were ultimately chosen. The full text of the 36 articles was reexamined based on the title first for suitability. Subsequently, the abstracts of the studies were reviewed, leading to the exclusion of 23 articles for various reasons, leaving 13 studies for further consideration in this study. However, two articles were disqualified as they did not contain a specific research methodology or reviewed literature papers; they relied solely on theoretical information. This step resulted in

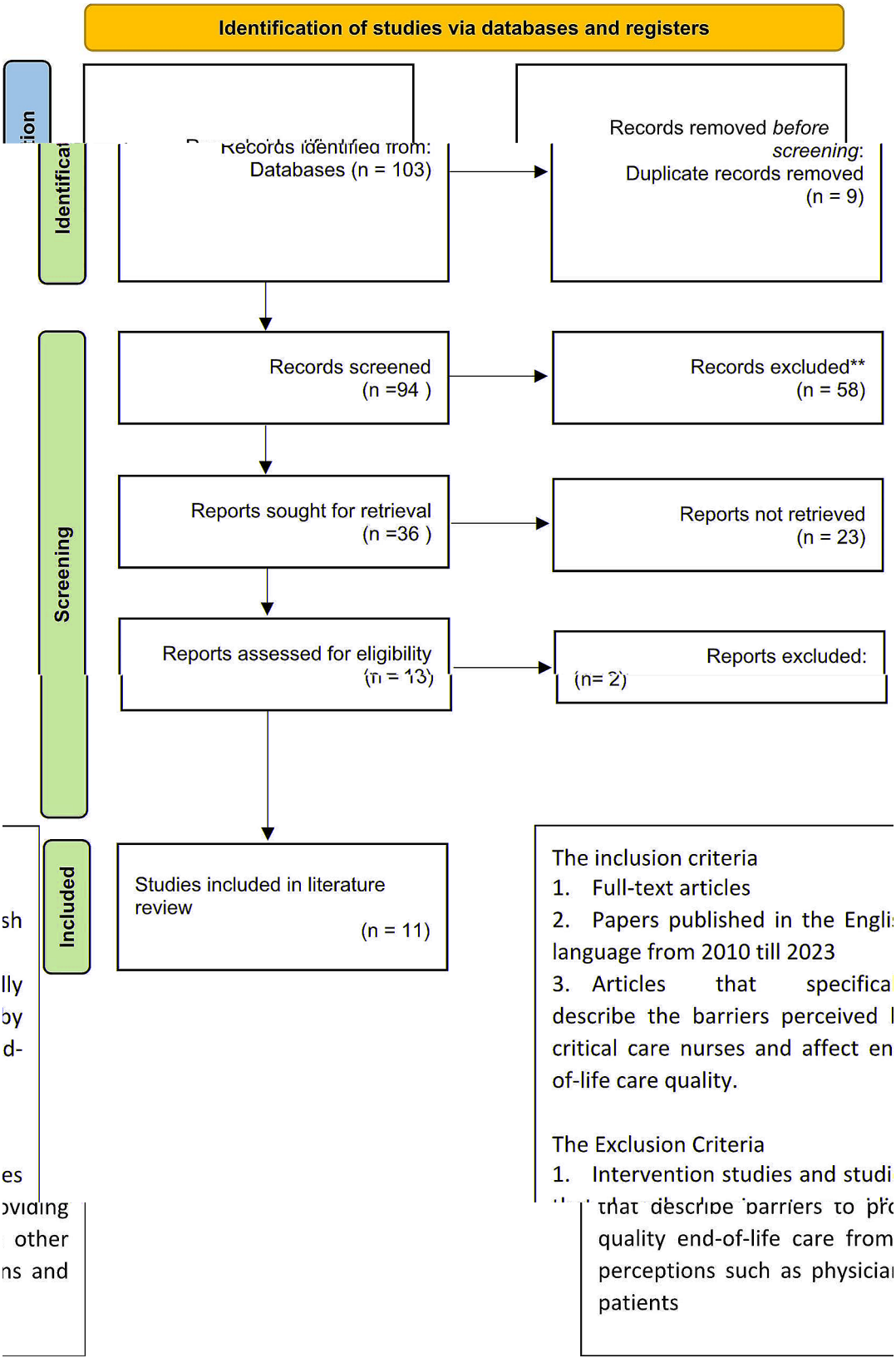

Fig. 1 PRISMA search flow diagram

Table 3 Summary table of characteristics of the included studies (*N* = 11)

Author(s)	Year	Country	Methodology	Sample	Tools	Summary of results	Sample size
Xu et al. [34]	2022	Eastern china	Quantitative descriptive cross sectional	20 ICU nurses	survey/ Beckstrand's questionnaire	Five barriers related to families (dealing with angry and distraught families, families not accepted poor prognosis of the patient, families not understanding what life saving measures mean. Families not present with dying patients. other barriers related to lack of time to provide quality EOLC	convenience sample 80.7% with bachelor degree 78.2% considered junior nurses half of them have five years experience 37% caring for dying patents
Ozga et al. [11]	2020	Poland	Qualitative method of Interview	convenience sample 31 ICU nurses (28 female and 3 male)	structured telephone interview	Authors classified barriers into three categories: hospital-related barriers, barriers related to patient's families, and barriers related to nurses. The main barrier perceived by nurses is the lack of support from managers. Other barriers include psychological and emotional burden and lack of EOLC training.	Convince sample, most subjects were female, small sample size
Chan et al. [38]	2020	Hong Kong	cross-sectional survey design	Convenience sample: 175 RN from ICU, ER, and palliative care units	Self-developed and tested survey	The highest barriers were nurses being too busy, lack of private space, lack of EOLC training, and families don't accept patients' prognosis	Convenience sample, single setting self-developed survey.
Sharour et al. [29]	2019	Jordan	A multisite cross-sectional descriptive design	Convenience sample: 163 critical care nurses from different governmental and private hospitals	Self-reported end-of-life questionnaire	The highest barrier was calling for a patient's status update from family and friends, Agreeing with physicians about the plan of care, death acceptance from family.	Small size sample, convenience, No clear connection between demographic variables and provision of EOLC
Omar Daw Hussin et al. [13]	2018	Malaysia	the cross-sectional design survey questionnaire	553 RNs working in different wards in a tertiary teaching hospital	Self -administered modified EOLC questionnaire	The highest barrier was dealing with distressed family members. Patient/ family-related barriers have the highest effect on EOLC.	A single setting Modified questionnaire
Mani and Ibrahim [22]	2017	KSA	cross-sectional design survey questionnaire	Convenience sample, 87 nurses, working in ICU	Modified questionnaire of EOLC	Family issues such as family don't accept the poor prognosis of the patient status, request for updates about patient status, communicating with grieved family, and families not understanding life-saving measures have the most important barriers in EOLC	Small sample size may affect the generalizability and convenience sample. Single setting. Modified questionnaire No clear connection between providing EOLC and demographic variables
Beckstrand et al. [35]	2017	USA	quantitative-qualitative mixed method design (survey and comparison with 17 years ago previous studies	2000 RN members in AACN randomly selected	National Survey of Critical Care Nurses' Perceptions of EOLC	The highest barrier was family members not understanding life-saving measures and disagreement with a physician regarding the Plan of care. Other barriers include Continuous calling for updates from Families and friends, dealing with angry Families, the conflict between family members to stop or continue life support, and too limited visiting hours.	Study exclusive to members of AACN, and low response rate affects generalizability

Table 3 (continued)

Author(s)	Year	Country	Methodology	Sample	Tools	Summary of results	Sample size
Holms et al. [30]	2014	West of Scotland	Qualitative design using phenomenological approach semi-structured interview	Five registered ICU nurses were selected from one ICU	Semi-structured interview	ICU registered nurses are not prepared well to give quality EOLC. barriers affecting EOLC include lack of training, support, and communication between staff, patients, and families	Single settings, small sample size, low response rate, and no clear evidence on the effect of demographic characteristics on EOLC. Authors do not clearly ensure data integrity and trustworthiness.
Jordan et al. [37]	2014	South Africa	Qualitative, explorative, descriptive design	9 out of 20 Registered nurses worked in private ICU	Semi-structured interview	ICU nurses feel conflict, emotions, and stress when caring for the patient at the EOL. Family members need multidisciplinary supportive relations. Communication and collaboration between health care teams need to be better. Nurses need more supportive strategies to help them care for patients at the EOL, such as debriefing, counseling, education, and training.	Small sample size selected purposefully, single settings private institution. All participants were female. This affects participants' responses. Demographic characteristics not addressed clearly
Attia et al. [12]	2013	Egypt	Descriptive design	70 RNs from oncology ICU, CCU, hepatic and surgical ICU	Structured interview sheet, adapted from Beckstrand and Kirchhoff	Factors that affect providing EOLC include barriers related to the ICU environment (poor design, visiting hours, heavy workload), family members-related barriers (family don't understand saving measures, request for updates about patient status, nurses' knowledge and skills (education and training about EOLC), and treatment nurses opinion in providing treatment).	A non-probability convenience sampling technique. Small sample size in one setting. Within one geographical area, Demographic characteristics were not identified clearly as Factors affecting providing EOLC
Crump et al. [28]	2010	USA	Cross-sectional, internal email survey	56 staff nurses working in adult CCU	(National Survey of critical care nurses regarding end-of-life questionnaire) and Perceptions of Knowledge Needed for Providing End-of-Life Care Survey	Barriers related to family and friends have the highest score represented by a continuous call for nurses about updates rather than an elected family member. Insufficient education for patients and families regarding the prognosis of EOLC. Critical care nurses need more education and training in order to improve their knowledge and skills in providing EOLC.	Small sample size single setting, the effect of the participants' demographics was not identified

*EOLC: END of Life Care, ICU: Intensive Care Unit, CCU: Coronary Care Unit, CVICU: Cardiovascular Intensive Care Unit, AACN: American Association of Critical Care Nursing

Table 1 Data base search outcomes

Data Base	Articles Selected	Overlaps
EBESCOhost (CINAHL + MEDLINE)	34	-----
Science direct	16	5
Hand search	44	4
Other sources	9	
Total	103	9

the inclusion of 11 research articles in this integrative review of the literature (Table 1).

Quality appraisal

To ensure the methodology's quality and avoid bias in the design, highly credible and respected search engines were adopted to select peer-reviewed studies according to the inclusion criteria in this review. The articles chosen in this review were categorized into two sections based on study design and research methodology: quantitative and qualitative studies. These were evaluated manually and independently for each study, with any disagreements resolved by two experts (KLA, Professor, and MCC, Associate Professor) who have experience in research methodology, using the Mixed Methods Appraisal Tool (MMAT) version 2018 [25]. This tool includes specific criteria for evaluating the quality of quantitative, qualitative, and mixed-method studies. The MMAT consists of a checklist of five research components for each type of study with a rating scale including "Yes," "No," and "Can't

tell." The overall results suggest that the evidence quality across the ten studies was high (Table 2).

Data synthesis

Thematic analysis in this review involves a systematic process of coding and theme development, using both inductive and deductive approaches. This method ensures a comprehensive synthesis of diverse data sources, providing valuable insights into the research topic [24, 26]. Thematic analysis was employed for all studies to investigate the subject of interest. The coding for the themes in this review followed the six recommended phases: Familiarizing with the data; making initial codes; searching for themes; reviewing themes and making a thematic plan; defining and naming themes; generating the final picture of the report [24]. The coding was conducted by the primary author (YSR) and confirmed by the three secondary authors (LH, SM, and LY). Any discrepancies were discussed and resolved through consensus.

Search outcomes

The search process yielded a total of 103 articles. All articles resulting from the search process were independently reviewed by all authors in this study for the research process, purpose, methodology, tools, main findings, recommendations, and limitations.

Characteristics of included studies

Eight cross-sectional descriptive studies and three qualitative studies were selected, which were conducted in the following countries: two from the USA [27, 28] and a single study from each of the following countries: Saudi Arabia [22], Jordan [29], Egypt [12], Malaysia [13], Scotland [30], Poland [31], Hong Kong [32], South Africa [33], and China [34].

In this comprehensive analysis of 11 studies, a diverse range of methodologies and findings were examined across different countries and healthcare settings. The studies included a mix of quantitative and qualitative approaches, with sample sizes varying from small convenience samples to larger cohorts. Key barriers to providing End of Life Care (EOLC) were identified, such as challenges in communication with families, lack of support from managers, and insufficient training in EOLC. The studies highlighted the importance of addressing these barriers to improve the quality of care provided by nurses in critical care settings. Notably, demographic characteristics and their impact on EOLC provision were not consistently addressed across the studies, indicating a potential area for further research and exploration in this field (Table 31).

The thematic analysis of included studies revealed several key themes and sub-themes related to barriers in End of Life Care (EOLC). These themes encompassed various aspects, including challenges related to patients and their families, healthcare institutions and the environment, as well as barriers specific to nurses. Communication and collaboration between patients, nurses, and families included issues such as seeking updates about patient status, misunderstandings about life-saving measures, misunderstanding poor prognosis, troubled family dynamics, and conflicts within families regarding life support decisions [22, 34]. Additionally, barriers related to Institution Policy and procedures highlighted concerns such as insufficient standard procedures, communication challenges in decision-making, inadequate ICU design, inappropriate staffing policies, and deficiencies in rooms, supplies, and noise control. Furthermore, barriers associated with nurses encompassed their emotional experiences and socio-demographic characteristics [12] (Table 4).

Results

Among the results of the selected articles on nurses' perceptions of barriers affecting quality EOLC, three main themes were identified: (1) Communication and collaboration between patients, nurses, and families (2) Institution Policy and procedural barriers, and (3) barriers related to nurses and their demographics. An overlap in some of these areas, such as the themes addressing barriers related to patients and their families, was identified [11, 22, 35]. This overlap indicates a high level of consensus between the authors in identifying the barriers affecting the quality of end-of-life care.

Communication and collaboration between patients, nurses, and families

After reviewing the existing body of literature in this domain, it was observed that some familial factors had been largely perceived as prominent barriers to providing EOLC by the nurses. Although some authors concluded family issues as the highest-ranking concern for nurses in providing quality EOLC, there were variations in the type of barriers they encountered [11, 28, 35]. For example, continuous requests for updates on patients' status from their families were identified as the top-rated barrier affecting the quality of EOLC from the perspective of critical care nurses. In addition, family misunderstandings about life-saving measures, as well as doubts and uncertainties regarding prognosis, resulted in a lack of time for nurses to provide quality EOLC, as they spent significant time explaining these matters [29]. Similarly, continuous phone calls from family members seeking updates on patients' conditions were ranked highest (M=4.23) among barriers affecting EOLC [28]. Additionally, dealing with distressed family members also received the highest total mean score (M=3.3) [13]. On the

Table 2 Mixed-Method Appraisal Tool (MMAT)

Category of study designs	Methodological quality criteria	Selected articles										
		Chan et al. [38]	Ozga et al. [11]	Sharour et al. [29]	Omar Daw Hussin et al. [13]	Beck-strand et al. [35]	Mani and Ibrahim [22]	Jordan et al. [37]	Holms et al. [30]	Attia et al. [12]	Crump et al. [28]	Xu et al. [34]
Screening questions (For all types)	S1. Are there clear research questions?	No	No	No	No	Yes	No	No	No	Yes	Yes	No
	S2. Do the collected data allow us to address the research questions?	Can't tell	Can't tell	Can't tell	Can't tell	Yes	Can't tell	Can't tell	Can't tell	Yes	Yes	Can't tell
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.											
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?		Yes					Yes	Yes			
	1.2. Are the qualitative data collection methods adequate to address the research question?		Yes					Yes	Yes			
	1.3. Are the findings adequately derived from the data?		Yes					*Yes*	*Yes*			
	1.4. Is the interpretation of results sufficiently substantiated by data?		No					*Yes*	*Yes*			
	1.5. Is there coherence between qualitative data sources, collection, analysis, and interpretation?		Yes					*Yes*	*Yes*			
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to addressing the research question?	Can't tell		Yes	Yes	*Yes*	*Yes*			*Yes*	*Yes*	*Yes*
	4.2. Is the sample representative of the target population?	yes		yes	yes	*yes*	*yes*			*yes*	*Yes*	*Yes*
	4.3. Are the measurements appropriate?	Yes		yes	Yes	*Yes*	*Yes*			*Yes*	*Yes*	*Yes*
	4.4. Is the risk of nonresponse bias low?	Yes		Yes	Yes	*No*	*No*			*Can't tell*	*No*	*Yes*
	4.5. Is the statistical analysis appropriate to answer the research question?	YES		Yes	Yes	*Yes*	*Yes*			*Yes*	*Yes*	*Yes*
	Total score /100%	80%	80%	100%	100%	*80%*	*80%*	*100%*	*100%*	*80%*	*80%*	*80%*

Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, Gagnon M-P, Griffiths F, Nicolau B, O'Cathain A, Rousseau M-C, Vedel I. Mixed Methods Appraisal Tool (MMAT), version 2018. Registration of Copyright (#1148552), Canadian Intellectual Property Office, Industry Canada

Table 4 Themes and sub-themes relating to included studies

Themes and Sub-themes	Related Studies
Barriers related to patients and their family	[29]
Calling for updates about patient status	[29]
Misunderstanding life saving measures	[12]
Misunderstanding poor prognosis	[28]
Troubled family	[21, 22, 30]
Conflict between family members about stop or continue life support treatment	
Barriers related to health care institutions and the environment	[11, 12, 28]
Insufficiency of standard procedure	[11, 28–30]
communication and collaboration in decision making	[12, 13, 30]
Poor design of ICU	[11]
Inappropriate staffing policies	
lack of rooms, supplies, and noise environment	
barriers related to nurses	[11, 13, 28,
Nurses' feelings and emotions	30, 37]
Socio-demographic characteristics	[13, 30, 38]

contrary, another study found that out of 70 nurses, the practice of calling nurses for updates on patients' conditions had the lowest impact on EOLC practice (62.2%), while misunderstanding about life-saving measures (65.7%) played a crucial role in determining the quality of EOLC [36]. The study concluded that the primary barrier related to patients and their families was the lack of understanding among family members about what life-saving measures entailed. Similarly, another source also reported consistent findings indicating that families often did not accept poor prognoses for patients and struggled to grasp the significance of life-saving measures [22].

Furthermore, previous studies have indicated that barriers affecting EOLC and thereby the quality of care include the presence of family members with patients, inadequate communication with patients' families, lack of involvement in discussions about patient care decisions, conflicts among family members regarding decisions to cease or continue life support treatment, and unrealistic expectations regarding prognosis [22, 30, 37].

Communication and collaboration among doctors and nurses are vital in designing an effective healthcare plan for patients. However, inadequate and inappropriate collaboration and support, such as conflicting opinions, disagreements, and insufficient cooperation between them, can lead to various difficulties that may result in poor patient care [22]. Research scholars who have conducted studies in this area have acknowledged that agreement between nurses and physicians regarding care directions for patients at the end of life is one of the most critical barriers to enhancing the quality of EOLC [29].

Similarly, another study found that poor communication between nurses and physicians resulted in inappropriate decision-making and disagreement about care plans, which subsequently impacted the quality of care [13]. Additionally, inadequate and poor communication between nurses and other healthcare teams diverted attention from the goal of care [28].

Failures in communication between nurses and other healthcare providers can lead to misunderstandings of care messages, which can affect EOLC practices [30]. It also highlighted the lack of communication and cooperation between doctors and other healthcare team members; nurses emphasized the need for a communication training course [11].

Good communication between nurses and physicians and consideration of nurses' opinions were found to enhance the quality of EOLC [12]. Furthermore, educating critical care nurses about communication and collaboration skills was reported as crucial for improving the quality of EOLC [13].

Barriers related to nurses

The given three sub-themes were identified regarding the impact of nurses-related barriers and the influence of some of their demographic factors on the quality of EOLC:

a) Lack of opportunities for training and education.
b) Emotional and psychological issue.
c) Nurses' socio -demographic factors.

Lack of opportunities for training and education

It was reported that critical care nurses were not adequately prepared to provide EOLC; nurses needed to increase their knowledge about cultural aspects, ethical issues, skills, communication, and training regarding the continuity of care and the management of physical and psychosocial symptoms [11, 13, 28]. Furthermore, nurses who did not participate in any EOLC training course perceived more barriers to delivering quality EOLC than those who had participated in introductory training courses [13, 28]. Attia et al. [12]. reported that 60% of critical care nurses perceived that they had received poor education and training concerning family grieving, symptom management, and quality EOLC. Furthermore, Holms et al. [30]. found that all participants acknowledged that they had received very little formal education and training on EOLC, particularly those who worked in intensive care. In a study by Jordan et al. [37], nurses emphasized that EOLC education is essential during the orientation period before starting their ICU jobs.

Emotional and psychological issue

Five articles in this review have studied the effect of nurses' feelings and emotions as barriers to providing quality EOLC [11, 13, 28, 30, 37]. Nurses stated that they feel sad when they cannot help the patients to die

peacefully, and they lack emotional support, considering this one of the main barriers to providing EOLC [11]. Staff morale distress was reported repeatedly during interviews with ICU nurses about their experience of EOLC. This feeling of despair is accompanied by many causes, such as lack of staff experience, poor communication, inadequate training about EOLC, lack of a suitable environment, and lack of support from senior staff [30]. Nurses acknowledged that they felt like they were participating in decisions to withdraw or withhold life-sustaining treatment, resulting in conflicting emotions and feeling helpless in advocating for the patients with mixed feelings of sadness, grief, anger, and frustration [37]. Lastly, Crump et al. [28] and Omar Daw Hussin et al. [13] observed that critical care nurses received inadequate emotional support from managers and experts within healthcare institutions, which affects the quality of EOLC they provide.

Nurses' socio -demographic factors

It has been identified that some socio-demographic characteristics of nurses also play a significant role in shaping their opinions regarding perceived barriers. For example, age, education, experience in the field, and other similar factors profoundly impact their perceptions of the barriers to providing EOLC. A study by Omar Daw Hussin et al. [13] revealed that nurses ($n=553$) aged 21–30 years old had the highest mean total score for barrier factors to provide quality EOLC compared to other age groups. This was also higher in diploma holders than in nurses with certificates and bachelor's degrees. Regarding years of experience as critical care nurses, they found that nurses with minimal years of experience (1–10 years) had the highest mean total score for difficulties. Similarly, Chan et al. [38] found that nurses' age, qualifications, and experience in caring for patients at EOL were significantly associated with their perceived barriers. Nurses' distress in intensive care units was linked to various factors, one of which is the lack of experience in providing EOLC, as reported by Holms et al. [30].

Institution Policy and procedural barriers

Healthcare facilities and the surrounding environment where patients stay have a significant influence on their quick recovery, mental and physical health, as well as health progress [11]. Therefore, healthcare institutions ought to establish a healthy environment for patients' well-being. However, in the current review, it was understood that nurses identified a group of barriers related to hospital settings, such as the insufficiency of standard procedures pertaining to EOLC in place at the institution, inappropriate staffing policies in the ICU, lack of rooms prepared for EOLC, insufficient supplies to assist families in EOLC, and a noisy environment with bright lights in patients' rooms [11]. Likewise, researchers concluded that intensive care unit nurses face time constraints due to heavy workloads; they also reported that intensive care units have poor designs that interrupt patients' privacy and affect the provision of quality EOLC [12, 28]. Previous studies identified a lack of EOLC rules and guidelines governing the provision of quality EOLC in critical care units, such as limited visiting hours, guiding preferred care pathways, and excessive paperwork burdens [12, 13, 30].

Discussion

In this section, we discuss the results of this review on the barriers to providing quality end-of-life care derived from the literature and compare them with the results of previous studies.

The themes emerging from the data helped us understand that some familial factors play a decisive role in hindering timely and effective EOLC provision to patients. Our findings are consistent with Beckstrand et al. [36] and Friedenberg et al. [39], who also found that families' lack of understanding or insufficient understanding of the life-saving measures performed for patients often contributes to delayed EOLC provision, due to their ambiguous opinions and uncertainty about the treatment given. Additionally, before taking any action, barriers related to other factors such as cultural aspects, not covered in this paper, should not be disregarded as they may have a significant influence on the outcomes.

There was agreement among all the authors in this review that communication and collaboration issues were at the forefront of factors that affect the quality of EOLC. in critical care setings, poor communication and collaboration between nurses and physicians makes nurses perceive their roles as secondary in the decision-making process. Additionally, critical care nurses also noted that interrupted communication leads to misunderstandings and conflicts in decision-making, diverting them from the goal of EOLC. It was also agreed that communication breakdown and conflicts in decision-making among healthcare teams impact the quality of care for patients with chronic end-stage diseases [40].

Reviewing the selected studies made us aware that nurses perceived inadequate training and education about EOLC significantly impacts their practice in delivering quality EOLC. The nurses also acknowledged the importance of receiving training and education regarding EOLC, such as symptom management, dealing with grieving families, and communication skills during the orientation period before starting their work in critical care units. Therefore, critical care nurses need to enhance their knowledge about cultural aspects, ethical issues, communication skills, and training related to the

continuity of care and the management of physical and psychosocial symptoms [36].

Apart from training issues, we found that the feeling of not being able to provide proper care to some patients, consistent distress due to increased workload, or managing patients with critical conditions such as prolonging unavoidable death could be attributed to their deteriorating mental health, which they perceive as a barrier to offering EOLC. These results were also supported by Calvin et al. [41], who found that novice cardiac care unit nurses expressed more fear and discomfort while caring for dying patients and communicating with their families.

This review further shows that healthcare organizations lack policies and guidelines that govern EOLC, such as staffing policies and scheduling visiting hours, leading to a shortage of nurses, increased workload, and decreased presence of family members with their patients. This lack of policies was also indicated in their study [36]. Critical care units in this review have a poor design that challenges nurses when providing EOLC and interrupts patient privacy. This is consistent with Sheward et al. [42], who found that the poor design of critical care units may compromise patients' confidentiality and affect the provision of quality EOLC.

In summary, our findings revealed that some familial factors play a decisive role in hindering timely and effective EOLC provision to patients. Moreover, nurses perceived that inadequate training and education about EOLC significantly impact their practice in providing good EOLC. Therefore, these aspects of our results are confirmed by broader literature, as evidenced before. The ceuurent review highlights the importance of enhancing family communication throught the needs for conducting education and training programs among health care profesionals in cririca care settings about communication skills. Additionally, healthcare organizations lack policies and guidelines that lead to a shortage of nurses, increased workload, and decreased family members' presence with their patients, governing EOLC. Thus, this integrative review addresses the question of what barriers affect the quality of end-of-life care as perceived by nurses working in critical care units. Combining diverse methodologies can lead to inadequate rigor, imprecision, bias, flawed analysis, synthesis, and deductions. Therefore, there is a need for future studies to further refine the key indicators.

Strengths and limitations

The selected studies were conducted in several countries, which may enhance the generalizability of the study findings. The limitations of this review study are that it focused mainly on descriptive and non-experimental studies. Additionally, the assessment of quality appraisal for selected studies was subjective to the authors according to MMAT, which could affect the studies' appraisal. The selection of only English articles may introduce bias regarding barriers beyond EOLC in countries where English is not commonly spoken.

Conclusion

The review indicated that healthcare organizations must provide critical care nurses with evidence-based pathways and guidelines to guide them in providing EOLC, increase emotional support from nursing managers and supervisors, and improve critical care settings design. Further studies need to be conducted on the barriers that affect the quality of EOLC and suggestions to overcome these barriers at the level of patients and families, nurses, physicians, other healthcare providers, and healthcare organizations to enhance teamwork and collaboration and improve the quality of EOLC.

This review also calls for additional research to be conducted to explore the barriers that affect the quality of end-of-life care. These studies should investigate barriers at multiple levels, including those affecting patients and families, nurses, physicians, other healthcare providers, and healthcare organizations. By identifying and understanding these barriers, recommendations can be made to overcome them, ultimately enhancing teamwork, collaboration, and the overall quality of end-of-life care.

International implications for practice

Many tools can be easily used to assess barriers to end-of-life care in critical care settings. We recommend monitoring and evaluating them regularly among nurses because they are significantly linked to the quality of end-of-life care. Furthermore, we advise to assess the quality of end-of-life care from patients and their families perspectives and provide them with greif and emotional support if they are unable to contribute in providing feedback that help in assissing the quality of end-of- life care. Refreshing training and education courses about end-of-life care aspects are significantly associated with the quality of care. We advise nursing management to conduct such courses for critical care nurses periodically. In general, there is an opportunity for improvement in terms of the quality of end-of-life care in critical care settings. As the critical care unit is part of a larger institution, it is worthwhile for the hospital's management to adjust their policies regarding staffing, ICU design, visiting hours, and provide evidence-based guidelines so they can enhance the quality of end-of-life care.

Abbreviations

EOLC End-Of-Life-Care
MMAT Mixed Method Appraisal Tool

Acknowledgements
Not applicable.

Author contributions
YSR and KLA set up the search strategy, with the verification of MCC. MCC, LYT, WTM analyzed results. All authors wrote and approved the final manuscript. SM, MN provided critical review and significant revision of the manuscript for important intellectual content, proof-read, and supervised the preparation of the manuscript.

Funding
This research received no external funding.

Data availability
The data used to support the findings of this study are included within the article.

Declarations

Ethics approval and consent to participate
Not applicable.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

Author details
[1]Department of Nursing Sciences, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[2]Princess Aisha bint AL-Hussein College of Nursing and Health Science, Al-Hussein Bin Talal University, Maan, Jordan
[3]Department of Nursing, School of Medical and Life Science, Sunway University, Bandar Sunway 46200, Malaysia
[4]Nursing and Midwifery Care Research Center, Mashhad University of Medical Sciences, Mashhad, Iran
[5]Department of Nursing, School of Nursing and Midwifery, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran
[6] Faculty of medicine, Yarmouk University , Irbid, Jordan

Received: 17 August 2023 / Accepted: 8 August 2024
Published online: 30 August 2024

References

1. World Health Organization W. palliative care key facts 2022, 2022(8 aug 2022).
2. Ransea K, Yatesb P, Coyer F. Modelling end-of-life care practices: factorsassociated with critical care nurseengagement in care provision. Intensive Crit Care Nurs. 2016;33:48–55.
3. Haji Ali Beigloo R, Mohajer S, Eshraghi A, Mazlom SR. Self-administered medications in Cardiovascular Ward: a study on patients' Self-efficacy, knowledge and satisfaction. Evid Based Care. 2019;9(1):16–25.
4. Ghasemi A, Karimi Moonaghi H, Mohajer S, Mazlom SR, Shoeibi N. Effect of self-management educational program on vision-related quality of life among elderly with visual impairment. Evid Based Care. 2018;8(1):35–44.
5. Kisorio LC, Langley GCJI, Nursing CC. Intensive care nurses' experiences of end-of-life care. 2016, 33:30–8.
6. Fraser J. Palliative and End-Of-Life Care Provincial Roundtable Report. Queen's Print Ont 2016 2016:1–31.
7. Ranse K, Yates P, Coyer F. End-of-life care practices of critical care nurses: a national cross-sectional survey. Australian Crit Care. 2016;29(2):83–9.
8. Namazinia M, Mazlum SR, Mohajer S, Lopez V. Effects of laughter yoga on health-related quality of life in cancer patients undergoing chemotherapy: a randomized clinical trial. BMC Complement Med Ther. 2023;23(1):192.
9. Mohajer S, Mazlum SR, Rajabzadeh M, Namazinia M. The effect of laughter yoga on depression in cancer patients undergoing chemotherapy: a randomized clinical trial. Hayat. 2022;28(3):284–95.
10. Bagheri S, Valizadeh Zare N, Mazlom SR, Mohajer S, Soltani M. Effect of implementing family-centered empowerment model on burden of care in caregivers of the elderly with Parkinson's disease. Evid Based Care. 2019;9(3):41–8.
11. Ozga D, Woźniak K, Gurowiec PJ. Difficulties perceived by ICU nurses providing end-of-life care: a qualitative study. Global Adv Health Med. 2020;9:2164956120916176.
12. Attia AK, Abd-Elaziz WW, Kandeel NA. Critical care nurses' perception of barriers and supportive behaviors in end-of-life care. Am J Hospice Palliat Medicine®. 2013;30(3):297–304.
13. Omar Daw Hussin E, Wong LP, Chong MC, Subramanian P. Nurses' perceptions of barriers and facilitators and their associations with the quality of end-of-life care. J Clin Nurs. 2018;27(3–4):e688–702.
14. Gott M, Ingleton C, Bennett MI, Gardiner C. Transitions to palliative care in acute hospitals in England: qualitative study. BMJ 2011, 342.
15. Blackman I, Adesina MT, Zannettino L, DeBellis DA. Factors that influence graduating nursing students' consensus about learning and end of life nursing care Background; Graduating nursing students' attitudes and behaviours towards learning and end of life nursing care. *ergo* 2014, 3(3).
16. Dening KH, Greenish W, Jones L, Mandal U, Sampson EL. Barriers to providing end-of-life care for people with dementia: a whole-system qualitative study. BMJ Supportive Palliat care. 2012;2(2):103–7.
17. Dufour B. Barriers Faced by Nurses Caring For End-of-Life Patients on a Medical Surgical Unit. 2018.
18. Sharour LA, Subih M, Salameh O, Alrshoud M. End-of-life care (EOLC) in Jordanian critical care units: barriers and strategies for improving. Crit Care Shock. 2019;22:88–97.
19. Ayed A, Sayej S, Harazneh L, Fashafsheh I, Eqtait F. The nurses' knowledge and attitudes towards the Palliative Care. J Educ Pract. 2015;6(4):91–9.
20. Cavaye J, Watts JH. End-of-life education in the pre-registration nursing curriculum: patient, carer, nurse and student perspectives. Volume 17. London, England: Sage Publications Sage UK; 2012. pp. 317–26.
21. Coffey A, McCarthy G, Weathers E, Friedman MI, Gallo K, Ehrenfeld M, Chan S, Li WH, Poletti P, Zanotti R. Nurses' knowledge of advance directives and perceived confidence in end-of-life care: a cross-sectional study in five countries. Int J Nurs Pract. 2016;22(3):247–57.
22. Mani ZA, Ibrahim MA. Intensive care unit nurses' perceptions of the obstacles to the end of life care in Saudi Arabia. Saudi Med J. 2017;38(7):715.
23. Sinuff T, Dodek P, You JJ, Barwich D, Tayler C, Downar J, Hartwick M, Frank C, Stelfox HT, Heyland DK. Improving end-of-life communication and decision making: the development of a conceptual framework and quality indicators. J Pain Symptom Manag. 2015;49(6):1070–80.
24. Whittemore R, Knafl K. The integrative review: updated methodology. J Adv Nurs. 2005;52(5):546–53.
25. Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P. Gagnon M-P, Griffiths F, NICOLAU B: mixed methods appraisal tool (MMAT) version française 2018. In.
26. Whittemore R, Knafl K. The integrative review: updated methodology. J Adv Nurs. 2008;52(5):546–53.
27. Beckstrand RL, Lamoreaux N, Luthy KE, Macintosh JL. Critical care nurses' perceptions of end-of-life care obstacles: comparative 17-year data. %J Dimensions Crit Care Nurs. 2017;36(2):94–105.
28. Crump SK, Schaffer MA, Schulte E. Critical care nurses' perceptions of obstacles, supports, and knowledge needed in providing quality end-of-life care. Dimens Crit Care Nurs. 2010;29(6):297–306.
29. Sharour LA, Subih M, Salameh O, Alrshoud M. End-of-life care (EOLC) in Jordanian critical care units: barriers and strategies for improving. Crit Care Shock 2019, 22(2).
30. Holms N, Milligan S, Kydd A. A study of the lived experiences of registered nurses who have provided end-of-life care within an intensive care unit. Int J Palliat Nurs. 2014;20(11):549–56.
31. Ozga D, Woźniak K, Gurowiec PJ. Difficulties perceived by ICU nurses providing end-of-Life Care: a qualitative study. J Global Adv Health Med. 2020;9:2164956120916176.
32. Chan CW, Chow MC, Chan S, Sanson-Fisher R, Waller A, Lai TT, Kwan CW. Nurses' perceptions of and barriers to the optimal end-of-life care in hospitals: a cross-sectional study. %J J Clin Nurs. 2020;29(7–8):1209–19.
33. Jordan PJ, Williams M, Clifford I. The experiences of critical care nurses with regard to end-of-life issues in the intensive care unit. Afr J Nurs Midwifery. 2014;16(2):71–84.
34. Xu D-d, Luo D, Chen J, Zeng J-l, Cheng X-l, Li J, Pei J-j, Hu F. Nurses' perceptions of barriers and supportive behaviors in end-of-life care in the intensive care unit: a cross-sectional study. BMC Palliat Care. 2022;21(1):1–10.
35. Beckstrand RL, Lamoreaux N, Luthy KE, Macintosh JL. Critical care nurses' perceptions of end-of-life care obstacles: comparative 17-year data. Dimens Crit Care Nurs. 2017;36(2):94–105.

36. Beckstrand RL, Callister LC, Kirchhoff KT. Providing a good death: critical care nurses' suggestions for improving end-of-life care. Am J Crit Care. 2006;15(1):38–45.
37. Jordan P, Clifford I, Williams M. The experiences of critical care nurses with regard to end-of-life issues in the intensive care unit. Afr J Nurs Midwifery. 2014;16(2):71–84.
38. Chan CW, Chow MC, Chan S, Sanson-Fisher R, Waller A, Lai TT, Kwan CW. Nurses' perceptions of and barriers to the optimal end-of-life care in hospitals: a cross-sectional study. J Clin Nurs. 2020;29(7–8):1209–19.
39. Friedenberg AS, Levy MM, Ross S, Evans LE. Barriers to end-of-life care in the intensive care unit: perceptions vary by level of training, discipline, and institution. J Palliat Med. 2012;15(4):404–11.
40. Stajduhar K, Sawatzky R, Robin Cohen S, Heyland DK, Allan D, Bidgood D, Norgrove L, Gadermann AM. Bereaved family members' perceptions of the quality of end-of-life care across four types of inpatient care settings. BMC Palliat care. 2017;16:1–12.
41. Calvin AO, Lindy CM, Clingon SL. The cardiovascular intensive care unit nurse's experience with end-of-life care: a qualitative descriptive study. Intensive Crit Care Nurs. 2009;25(4):214–20.
42. Sheward K, Clark J, Marshall B, Allan S. Staff perceptions of end-of-life care in the acute care setting: a New Zealand perspective. J Palliat Med. 2011;14(5):623–30.
43. Nia MN, Mohajer S, Ghahramanzadeh M, Mazlom SR: Effect of Laughter Yoga on Mental Well-Being of Cancer Patients Undergoing Chemotherapy. Journal of Evidence-based Care 2019, 9(3).

Publisher's Note