ORIGINAL RESEARCH

Enablers and challenges of caring in the intensive care unit–Part 1: In relation to patients, families and ICU environment

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ABSTRACT

The concept of caring is vague and complex, especially in critical environments such as the intensive care unit (ICU). ICU nursing care includes not only patients but also extends to patients' families, nurses, other health team members and the unit's environment. A focused ethnographic study was conducted in an Australian ICU. The data was collected from 35 registered nurses through various resources: participants' observations, documents reviews, interviews, and additional participants' notes. Data were analysed inductively and thematically. The study outlines comprehensively and widely a wide range of enablers and challenges affecting caring in the ICU - which originate from different sources such as patients, families, nurses and the ICU environment. Nurses and other stakeholders such as clinicians, educators, researchers, managers and policymakers need to recognise these factors and their implications for providing quality care in order to enhance and maintain the optimal level of caring in the ICU. This paper is the first in a two-part series that explores the enablers and challenges to caring in the ICU. This paper explores the ICU nurses' experiences and perspectives of the enablers and challenges to caring in the intensive care setting, in relation to patients, families and the ICU environment, while the second part will be concerned with the enablers and challenges of caring that are related to the nurses in ICU.

Key Words: Caring, Enablers/facilitators, Challenges/barriers/obstacles, Intensive care, Focused ethnography, Nurses/midwifes/nursing

1. INTRODUCTION

While there is a plethora of literature devoted to the concept of caring, it remains nebulous and complex. Caring is both an everyday activity and a professional attitude within the discipline of nursing. The association of care with other words in nursing language has meaning when used in compound nouns. For example, nurses use the terms 'caregiving',[1] 'care plans',[2] 'nursing care'[3] 'plan of care',[4] 'duty of care',[5] 'health care',[6] 'basic, fundamental or essential care'[7] and 'intensive care'.[8,9] Caring has also been conceptualised as 'patient-centred care', which was described as individualised holistic patient care underpinned by respect and the uniqueness of the individual who has their values, preferences and needs.[10] These global terms are common nouns in nursing literature, and in essence, they portray the nurse's activities. Historically, it has been noted that the terms 'caring' and 'nursing care' may be used interchangeably.[11,12]

Caring in the ICU is stressful and complex as nurses work with critically ill patients with high demands. Technological dehumanisation poses a challenge for nurses in ICUs,[13]

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where the nursing care for patients can be dehumanised because their care requires the substantial use of technologies that can override other caring factors. Caring in the ICU includes patients and extends to the families of patients, nurses, other health team members, and the ICU environment.

Caring in ICU is influenced by different factors that can be either enabling factors to enhance care provision in the ICU, such as collaboration and leadership during care transitions[14] or challenging factors that can impede the provision of care in ICU as evidenced in incidents of inappropriate nursing caring.[15] For example, conflict or relational issues between medical staff with nurses or with patients and their families,[14,16] dehumanising patients,[17] and difficulty communicating and decision-making.[14]

Regarding end-of-life (EOL) care, Brooks, Manias[14] defined enabler as "something that enables the achievement of an endpoint", "a challenge is a problem or difficulty associated with initiating and delivering EOL care", whereas "a barrier is an obstacle that prevents EOL care". However, the author considered the barrier as just a major challenge that can be overcome or solved to achieve the goal. Therefore, exploring these factors is imperative to enhance the quality of care, specifically with the recent changes in the intensive care. This paper is the first part of the factors that enable or challenge the caring in the ICU regarding patients, families, and the environment. The second part will explore the enablers and challenges to caring in ICU in relation to nurses.

Background

The nature of ICU nurses' work differs from that of nurses in general wards. For example, there is a low nurse-to-patient ratio (1:1 or 1:2) in ICU,[18] where nurses are continuously at the bedside and monitor all aspects of patients' health status. Nursing care in the ICU is either reinforced by facilitators or hindered by barriers or challenges of providing quality care.

Many studies have revealed that nursing care has been missed for various reasons as patient's acuity, dehumanisation of the patient, material resources, inadequate labour, workload, mixed skills, knowledge level and attitudes of staffing, communication between teamwork, communication between health professionals with patients and their families, and communication with patients and families about end-of-life care.[17,19–22] For ICU families' involvement, responses such as asking a lot of questions, language barriers, and challenging clinical decisions such as insisting on curative treatment considered as barriers to end-of-life care for their patients.[23] Conversely, ICU nurses acknowledged the presence of the families of dying patients as a supportive practice.[24] Furthermore, challenges were reported in relation to the ICU environment as a lack of private space for communicating with the patient and family. The design of the ICU did not always allow for the family to be physically close to the dying patient, the families rarely have a private space where they can rest, the presence of special equipment at the bedside, and the proximity of other sick patients- were identified as barriers to the provision of a peaceful death.[14]

Since caring is a professional attitude in nursing, it is worth investigating nurses' perceptions and experiences of enablers and challenges of providing care in the ICU, especially with the contemporary changes in the intensive care realm. Acknowledgment of these factors assists nurses in maintaining the optimal level of caring in the ICU.

2. METHODS

This study explores the ICU nurses' perceptions and experiences of the enablers and challenges of caring. This study employed a focused ethnography, which offers an opportunity to gain an understanding and appreciation of the nursing profession and its role in society by examining nurses' specific beliefs and practices of particular healthcare processes.[25] This study explores the nurses' perceptions and experiences of the enablers of and challenges to caring in an intensive care setting related to the ICU patients, families and environment.

The study was undertaken in one of the largest private ICUs in Queensland, Australia. Purposive sampling was used to invite 38 registered nurses (RNs) to participate in this study. Three participants withdrew for different personal reasons. Subsequently, 35 was the total number of participants. The inclusion criteria for participation were: RNs, either male or female; employed full-time; employed for a minimum of one year in the unit; working rotating shifts; willing to be interviewed and observed within the practice setting. Demographic data for participants is presented in Table 1.

The researcher met the Nurse Unit Manager (NUM), who introduced her to the staff. The researcher provided the NUM with letters of invitation and advertising flyers. The researcher contacted the participants personally and provided them with three sheets: Information Sheet, informed consent, and a demographic questionnaire.

Data were gathered from multiple sources, including participant observations, document reviews, interviews and participants' additional notes. In addition, an unstructured observation method was used to obtain detailed descriptions of participants' behaviours as they occurred or shortly afterwards by compiling field notes or completing the researcher' reflective journal.

Table 1. Basic demographic data sheet for study participants

Age (*n*/%)	Gender (*n*/%)	Marital Status (*n*/%)	Ethnic background (*n*/%)	Religion (*n*/%)	Education (*n*/%)	Years' experience in ICU (*n*/%)
Range 22-60	F	Married	Australian	Catholic	Masters	Range 1-34
20-24/5.7	29/83	25/71	25/71.4	12/34.2	6/17	1-5/11.6
25-29/8.5	M	Partnered	New	Protestant	Bachelors	6-10/37.2
30-34/14.2	6/17	1/2.9	Zealander	3/8.6	17/48.5	11-15/20.1
35-39/20		Engaged	1/2.9	Anglican	Diploma	16-20/5.8
40-44/8.5		1/2.9	British	1/2.9	2/5.7	21-25/5.8
45-49/17		Divorced	4/11.4	Church of England	Postgraduate	26-30/8.6
50-54/14.2		1/2.9	Irish	1/2.9	certificate	31-35/11.5
55-59/8.5		De facto	1/2.9	Buddhist	7/20	
60-65/2.8		3/8.6	Indian	2/5.7	Graduate	
		Single	1/2.9	Hindu	certificate for	
		4/11.4	Filipino	2/5.7	critical care	
			1/2.9	Pentecostal	3/8.6	
			Thai	1/2.9		
			1/2.9	Honours & respects all		
			Chinese	religions		
			1/2.9	1/2.9		
				No religious affiliation		
				12/34.2		
Total participants		35				

Note. n = Number, % = Percentage. Participants were on average 41 years old, and 18 years of experience.

Participants were observed for more than two shifts because they interacted with other participants.

Participants were interviewed after they were observed in this study. The researcher used the Nurses' Interview Guide, which included asking participants' permission for a digital audio recording of the interview. The researcher conducted pilot face-to-face, semi-structured interviews with four participants, which enabled pre-testing and improvement of the interview guide and process.[26] Each interview started with a broad, general question such as 'How do you communicate that you care to your conscious/unconscious patients'. Then more specific questions and probes and prompts such as 'Tell me more about that were used to clarify content and augment the information provided. The researcher took notes before, during and after the interviews. The average interview time was 1 to 1.5 hours. There were 44 follow-up interviews to obtain further clarifications from observational periods. Additionally, participants were asked to note additional information[27] about their caring experiences in the ICU. These additional notes allow the participants to feel comfortable about self-disclosure in private and at a comfortable and convenient time.[28]

Reviewing documents such as nurses' records, policies, and procedures allowed the researcher to access difficult data by direct observation and interviewing.[29] Documentation was extensively read and noted in the field notes to obtain greater insight into nurses' responses to patients and their relatives, patient observations, and the progress of their condition. After six months of the fieldwork, no new data was forthcoming, and the study had reached data saturation.[30]

Data from these various resources were inductively and thematically analysed. First, the researcher reviewed a number of approaches used by different scholars.[30–33] From this, emerged a modified six-phase analysis process. Next, the data were segmented, compared, contrasted, synthesised, categorised and conceptualised to identify common codes, categories/subthemes and core themes from which a mental map of the findings was constructed and reconstructed to capture the core concepts in the dataset.[34]

The researcher did not return the interview transcripts to participants for comments. Instead, she conducted instant member checking by employing various strategies such as seeking clarification by probing, paraphrasing, using open-ended questions, and listening with an interpretive intent during interviews.[35]

Trustworthiness was maintained by credibility, dependability, confirmability, transferability, authenticity and reflexivity.[30,36] Credibility was established through using data

triangulation from various resources. Dependability was achieved through consistency in the methods of data collection and analysis, and triangulation. Confirmability was established by reflecting on the reflexivity notes. Transferability was obtained by the thick description of the research process, such as outlining the process of gaining rich data saturation about the qualities of ICU nurses to provide quality care. Authenticity was achieved through prolonged engagement and persistent observation in ICU, obtaining accurate, dense and vivid descriptions beyond the researcher's reflexive journal.[30] Also, reflexivity was achieved by reflective journalism about preconceived biases, preferences and preconceptions that the researcher may have to influence or interpret the state of data.[30]

Ethics approval from both the human research ethics committee at the university and hospital was obtained prior to the study's commencement. The researcher provided the participants with a research information sheet, which included the study's objectives, methods of information gathering, risk level and assurances of confidentiality and anonymity. Informed consent from each participant was obtained prior to collecting data. The participants were advised that they could withdraw at any time without prejudice. To assure anonymity, participants were deidentified and coded with letter P and number (e. g., P1).

3. FINDINGS

The participants identified numerous factors affecting caring in ICU, which were either enablers that enhanced nurses' ability to care or challenges that impeded this ability. These factors were originated from various sources: patients, families, nurses and the ICU environment (see Figure 1). In this paper, only the enablers and challenges related to patients, families and the ICU environment is discussed, and the factors related to nurses will be discussed in Part 2.

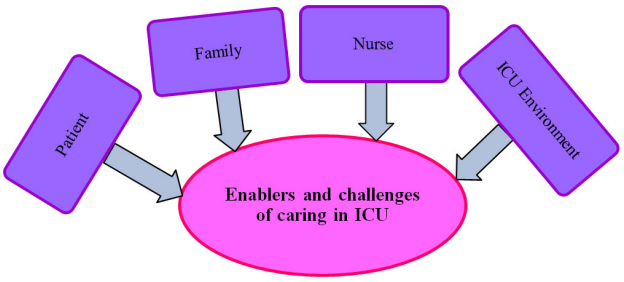

Figure 1. Enablers and challenges of caring are related to ICU patients, families, nurses and environment

3.1 In relation to patients

The patient was identified as the first source of enablers and challenges in ICU. Assessing the patients' level of knowledge and how it might affect them was an essential consideration for participants. There is always an issue with how much information will be beneficial or distressing. Participant P23 summed the necessity to respect patients' desires about being informed or not on their health status:

Some patients might have more of a cognitive understanding and want to know everything. . . you have to let them know what is going on, and that might affect your caring because sometimes if they know too much, they get really stressed about it. Sometimes, they don't need to know while they're so sick . . . they've got a lot of other things going on. On the other hand, you might have completely a different patient, who is depressed or one of those old population who don't want to know what's going on. Then. . . you need to respect it.

The criticalness of the patient's illness is an essential consideration for nursing care in ICU. For some participants, the acuity of illness was viewed as an enabler (with unconscious patients), while others saw it as a challenge to the provision of care, participant P7:

The patient's illness can be a challenge and we are limited by what we can do for them because of how sick they are. If they [patients] are critically unstable patients or ventilated, then you are really with their physiological needs that have to be addressed first. Nurses are too busy in stabilising and maintaining life support for the patient. It is hard to manage their psychological needs because you are so busy. In some ways, the patient gets left out a little bit from other caring activities.

Considering the patient's level of consciousness, many participants prioritised care irrespective of whether the patient was conscious or unconscious. Participants expressed mixed views about whether the level of patient consciousness is an enabler or a challenge of care. Participant P34 explained why she preferred looking after conscious patients, stating that "caring for conscious patients is easier because they can tell you what they feel if something hurts them or not". In contrast, other participants preferred caring for unconscious patients: "when we've got unconscious patients, we have more time to do things for them without much distractions" (P19).

In terms of the patient's length of stay in ICU, participants viewed the period of hospitalisation as having a significant effect on the patient and the provision of care. As some patients do not receive sufficient care because of the shortness of their stays and the high turnover in ICU. Participant P5 explained:

When a patient comes in today and goes tomorrow, your

care is different because you do not get a chance to know the patient and therefore, find yourself only providing basic care and the patient goes to the ward, but if the patient stays longer, you get to know the history in more depth; you become more close [sic] to the patient, you feel for the patient, and that is when your care gets more involved.

Other factors related to patients affecting caring were age, gender, weight and language. Age and gender were identified as interrelated sensitive factors that the nurse considers when looking after patients in ICU. The way staff communicated with patients differed in terms of their age. From the period of observation and interviews, the elderly patients seemed to prefer to be cared for by mature and experienced nurses irrespective of their gender, "They [elderly] trust us as we are mature in age and experienced nurses" (P20). However, gender is considered an issue in other situations, P37 expressed:

We had some requests from patients such as: "Can I ask not to have a male nurse to look after me". The patient's request was honoured. This is a normal practice within the unit to respect the requests of patients, irrespective of whether it is an issue of gender or age or ethnicity.

Interestingly, the patient's weight was a challenge to providing care in ICU. Some nurses refused to look after bariatric patients because of their back injuries. As witnessed in the fieldwork, nurses with such injuries were allocated to non-bariatric patients or were not required to be involved in any activities associated with lifting or turning these patients; they just held the Endo Tracheal Tube while the patient was turned.

The language was described by participants as a potentially significant challenge to caring for patients in ICU, whether it was on the patient's or nurse's side (the latter will be discussed in part 2). Patients from non-English speaking backgrounds often posed significant challenges for nurses to communicate with. In such situations, an interpreter was engaged, if possible. When an interpreter was not available, nurses asked a family member who could speak English to interpret. If both were unavailable, body language or communication tools were used as viewed by the researcher in ICU.

Participants viewed patients' behaviours as significantly influencing the provision of care. The cooperative patient facilitates the caring process, while confused, aggressive or combative patients can impede quality care, "When patients are cooperative, it is easy to care for them" (24), "non-compliant patients were a big challenge because they won't take their medications. That set nurses back 30 or 40 minutes just trying to placate someone and to give them medications when nurses have other patients to see" (P3).

Prolonging the life of an ICU patient unnecessarily was raised by many participants as a point of tension between the treatment team, the family and the nursing staff when doctors extended the patient's life at the family's request when the prognosis was terminal. In such cases, participants felt torn between providing good EOL care and being part of this. Participant P10 summarizes participants' feelings:

We [nurses] do not like when a decision is being made by doctors not to do anything for the patient, except for prolonging the inevitable, simply for the sake of the family who is not prepared to let them die. We appreciate that the family has their needs, but it should not be at the expense of the patient. . . We [nurses] are all on one page in this regard, but our hands are tied. It is the decision of [the] medical treating team in consultation with the family.

The researcher observed staff behaviours in which the patients were objectified, particularly in reference to handover, participant P36 said:

Because ICU is such a technical and high-technology environment, we [are] so concentrated on the technology and test results . . . we can forget that we are caring for human beings. This often results in us focusing on the intervention and its outcome . . . it is an aspect of care that none of us like doing. It just seems to take over from time to time, especially in the handover.

3.2 In relation to families

The family was identified as the second source of enablers and challenges in ICU. Three key factors were identified: involvement of the family in the provision of care, the family's culture and family conflict.

The presence and involvement of family members in the care of their loved ones were valued by participants as an important aspect of the healing process, especially in providing comfort and support and reducing feelings of isolation and loneliness. However, the staff were sometimes confronted with challenges of how best to involve family members; some did not wish them to be involved, while others sought heavy involvement was to the detriment of the patient. The challenge for staff was how to strike a balance concerning family involvement to facilitate rather than interfere with care. Several participants described some of the tactics used to involve family members in caring for their patients. For example, a common strategy was inviting them to the family conference, "We need to have a very close communication with the family to keep them in the loop of what's going on...to have a very structured approach to family conferencing in order to keep

them informed" (P1). Another strategy was to allocate tasks, which family members could perform to feel that they were participating in their patient's care, P19:

Some families may ask you: 'what can they do?'... you can suggest that if they have a nice body cream, they can come and sit with their relative and massage their feet or hands. It's so much nicer for the family to get involved in their loved one's care than for me [nurse] to do it because sometimes the family just feel so helpless, and if they can do something... that makes them happy... because it's caring about family too.

In situations where the patients are unconscious or unable to communicate, the family is a significant resource to provide information about the patients that can be incorporated into their care, treatment plan and decisions, "On occasions, the patient is unable to remember their past medical history as a result of their situation. Information from the family can change the whole context of care.... we all value the input of family" (P7).

The presence of family often has a calming effect that staff cannot provide: "the presence of family impacts positively on the patient... has a calming effect as a result of hearing familiar voices and seeing familiar faces" (P23). On the contrary, "In some situations when the presence of family causes anxiety or agitation, we ask them to leave for a while" (P23). At other times, the family is asked to leave for staff to follow routine patient care, as observed by the researcher.

A further aspect relating to the family is the repetitive questioning that occurs, especially when the family are anxious about their relative's condition and preoccupied with the potential outcome, P17:

The importance of communicating with relatives cannot be overestimated... it can become repetitious not only because family members are anxious and upset about their family member and forget what they have been told, but also in situations where there are many family members. Each member wants to hear what is happening, which involves quite often repeating yourself, which at times can be irritating.

Participants stressed the need for respect, privacy and protection of patient dignity as a fundamental principle of care, P37:

With simple procedures that are not of an invasive nature or do not lead to the exposure of the patient, family are encouraged to stay. However, when this is not the case and the patient may be compromised by the family's presence, they are generally asked to wait in the waiting room until the procedures have been completed. It is so important to protect our patients; we are their advocates at all times.

Conversely, participants valued and honoured that families felt safe to share their hopes, aspirations, fears and doubts with the staff, "nurses are in a privileged position as they are often invited into the personal world of family members, especially when we are virtual strangers ... such times are very special and precious because people let you into their lives" (P19).

Many participants conveyed the family's cultural needs as essential to providing quality care, "there is an expectation of the unit that everybody is to be treated with dignity and respect, irrespective of where the patients and relatives come from - their cultural heritage" (P1).

Nurses need to take into account each family's cultural and spiritual needs. At times, this can be difficult, especially when people who come from cultural backgrounds where all the family want to be with their family members all at once. We as a unit often have to go into 'crowd control', but the unit has in place processes and protocols for dealing with such situations (P18).

Meeting the spiritual and religious needs of patients and their families was raised by participants and noted by the researcher on several occasions, P29:

If the relatives are very religious and they want whoever to come and see their family member... if they were Catholic, a priest would be called, and if of the Jewish faith, a Rabbi would be called, if requested. This is a normal part of daily practice in our unit.

For many participants, one of the challenges they faced was family conflict. This included primarily issues relating to family arguments and disagreements over decision-making on issues such as stopping life support or organ donation. These cases require a non-involvement by staff that goes beyond professional involvement. The usual procedures are to deescalate the situation by seeking the intervention of the unit manager. If not resolved, then a family conference is held that issues can be discussed and resolved, if possible, P37:

When issues of conflict arise between family members.... we quietly and expediently remove them from the situation, which is followed by an opportunity for them to debrief with a staff member. The situation is then documented in the case notes and discussed at patient review sessions ... If conflicts continue, the unit manager would be asked to intervene to ascertain what the issue is and assist in resolution of the situation ... If all fails, then a family conference is convened, attended by senior unit staff caring for the patient.

Many participants spoke of the difficulty in dealing with family issues and indicated that they do not like to participate, but usually found themselves involved in one way or another. Attention to the complex needs of families was an area where nurses found themselves ill-equipped, especially when there was family dissent or conflict, as the researcher noted when attending a number of family conferences. According to P7, "In situations where there is family disharmony or conflict, we do not like to be involved", "Being caught in the middle between family and the patient is not a nice place to be... Counselling service is the best option.... However, every now and again you cannot avoid being involved" (P37).

3.3 In relation to the ICU environment

The fourth source of enablers and challenges to caring in the unit was the ICU environment itself, including the nature of the ICU layout, noise and distractions, availability of resources and the ratio of nurses to patients.

3.3.1 *ICU layout*

A number of participants expressed their dissatisfaction with the design/layout of the unit, and particularly the size of the rooms. These are viewed as getting smaller and more restrictive, especially when additional machines are needed. "Sometimes when a patient requires to be put on haemodialysis, we struggle to find space. Everything is so cramped with little space to move... when we are carrying out procedures" (18). Coupled with no access to windows or balconies, P17:

Sometimes when you are caring for someone who has been in the unit for over 20 days, they get bored ... looking at the ceiling ... if they only had a window to look out, it would make a world of difference to them.

3.3.2 *Noises and distractions*

Participants considered noises and distractions to be another impediment to care provision because the staff were often distracted by alarms, smells, lights and phones that were constantly ringing, along with incessant activities in the unit. Many of these distractions were witnessed by the researcher. As the unit's noise level at handover between shifts appears to disrupt the flow of communication, important information about the health status of patients and families is not being conveyed. This led some nurses to suggest having their handover in a quiet place (NUM's office) or asking the receptionist or float nurses to respond to phone calls, families, doctor's inquiries or unattended alarms, P37:

Nurses in our ICU try to minimise all noise as much as possible by controlling the environment, by having a rest time for patients and families from 2–4 pm and by attending to phone calls, buzzers and beeps. Also, at night if patients are complaining about the lights, we try to have minimum lights ... and use a flashlight when necessary ... we try not to disturb patients; we close the curtains and minimise the staff chatter.

3.3.3 *Resources availability*

High resources availability in ICU such as human, material, and financial in nature boosts the ability of staff to provide the necessary care to the patients and their families. Conversely, the absence or shortage of resources makes caring in ICU difficult. Human resources include health professionals, counsellors, ministers of religion, receptionists, students, and volunteers. For example, participants appreciated the continuous accessibility of medical staff, especially doctors who could be contacted for emergencies, writing of treatment orders or clarification about patient management. P34 said, "One of the reasons that our nurses like our unit is because doctors are around; they are here 24/7 for any emergency or in case of any concerns or problem". The researcher noticed that when the original ICU nurses are available, the routine of the work run easily because they are familiar with their own ICU environment and system. However, at times of staff absenteeism (e.g., sickness), problems may arise, necessitating the employment of agency nurses. They are generally unfamiliar with this unit and need guidance and follow-up to ensure appropriate care is being given.

Another example was having access to an interpreter as a resource when language was an issue. This enabled nurses to obtain information from the patients and their families to inform them of what was happening to them. However, with the unavailability of the interpreter, communication is impeded, and care can be compromised, as discussed earlier. Counsellors play an important role in providing support for both patients and their families, especially in death situations where counselling is also available to staff if needed for debriefing and support, as the researcher observed that one participant had an appointment with the counsellor on one occasion.

Students could be a resource. For example, some participants found students useful, especially when the nurses were busy caring for two patients, P35:

Sometimes you have a good student, which is a great help when they are confident to document OBs [observations and vital signs] and can provide basic nursing care. It helps a lot when you have two patients. Their contribution to the care of patients can be substantial.

Conversely, other participants considered students as another burden. At times, tension can surface when staff are reluctant to assume a supervisory role because of the complexity of the ICU, which takes nurses away from patients when they

try to educate their students. Sometimes, participants felt exhausted because of their workload or were simply disinclined to mentor students. The researcher observed this behaviour on four occasions. In further discussions with participants, the patient was emphasised as the first priority, "Firstly, our duty in ICU is to care for the patient. It's hard having a sick patient, family and a student. Sometimes nurses feel the student is like another patient that needs a lot of time!" (P25).

Students are an extra load... we have to slow our pace down to teach them, which interferes with the caring process... It is time-consuming for nurses who have students because they [nurses] are having to be with them all day and that exhausts them (P7).

Technology is a key contributing factor of caring in ICU. Nurses were aware of the need for balance in patient care and technology alike, as maintaining machines is part of patient care. Participants use technology to promote rather than hinder patient care, P1:

You cannot have intensive care without monitoring and technology... Many junior nurses get caught up in the technology, and they actually forget the patient in the bed. We have to put it into perspective that we need to do both; looking after the technology is essentially looking after the patient.

Further, participants stressed the importance of prioritising maintenance of machines and equipment for the safety of the patients at certain times:

ICU patients are sick and need psychological support during their illness experience. However, in the acute stages of a patient's illness, priority needs to be given to what can be called technological care such as the use of machines and drips. In many respects, the rest has to be put on hold until the patient is stabilised (P19).

Participants presented a wide range of reasons for wanting to work in this highly technological environment. Some participants believed that it is better for patient recovery and that the work is easier, quicker and more accurate. In addition, technology provides the opportunity to spend time with patients and their families. Further, it gives nurses a sense of personal satisfaction and professional importance because they are highly respected and recognised for their expertise, P11:

I love new technology because it works better for everybody. It gets the patients better and out of here faster. I spend a lot of time learning about how it all works and making sure everybody is familiar with it.

This satisfaction was articulated by participants, "Using technology enables nurses to provide a better level of care in some aspects as most of those patients would not be alive without it. Technology saves lives and time" (P25), "technology makes life much easier for us when you have monitors such as IV infusion pumps which are easy to set up and can accurately record the health status of the patient. Without technology, you'd be a lot busier" (P29), as "We have more time to spend with the patient rather than standing there and counting the IV drops or measuring vital signs" (P33).

The budget as a resource can affect patients' care in both positive and negative ways. For example, when ICU is appropriately budgeted, the NUM and the in-charge nurses can request agency nurses, if required. However, when the budget is restricted, it is difficult to employ extra staff from the casual pool or the agency. Consequently, staff shortages because of budget constraints can lead to patient care being compromised. Therefore, consideration is given to what should constitute the required number of staff to the changing healthcare requirements of the patients and the unit budget, "Our in-charge nurses need to take in[to] account the budget concerns when they request casual or agent staff in case of shortage or absence of the staff" (P1). The researcher witnessed many occasions where the in-charge nurses had to communicate administration to seek permission to hire additional replacement staff.

3.4 Nurse-to-patient ratio

The nurse-to-patient ratio was another important factor for caring in ICU, which depended on the patient's condition. The ratio is usually one-to-one, which allows for continuous monitoring of the patient and the rapid response from health professionals when deterioration of the patient is detected:

Being able to provide one-to-one care is consider[ed] by the unit to be appropriate, as it allows for continuity of care and ongoing observation and management. It allows the staff to be able to monitor any subtle changes in the patient's condition and respond quickly. Having one patient in ICU allows the nurses to develop a close relationship with their patients through being able to spend more time with them and their families (P38).

Nevertheless, at times it was observed by the researcher that nurses were required to care for two patients if they were stabilised and not intubated— and there were times that staff struggled to provide the required care. P23 experienced such a situation:

When the ICU nurse gets two patients, it is quite hard, especially if one patient's health status deteriorated. Sometimes the outcome of such situations was for the nurse to focus on the more critical patient and therefore, not spend the same

amount of time with the other patient (P23).

On some occasions, nurses were required to care for three to four patients as a result of ward patients being transferred to the ICU when ward beds were unavailable, "Usually we get ward patients when there are no beds available in the general wards, and then the nurse in our unit is expected to get three to four ward patients" (P7). The findings revealed enablers and challenges for the participants in the ways they were able to care for their patients, families, nurses and the ICU environment (the nurses' part will be discussed in paper part 2). See Table 2 for some examples.

Table 2. Examples of enablers and challenges of caring in ICU

Components	Factors	Caring enablers (+ve effects)	Caring challenges (–ve effects)	Both, enablers and challenges (+ve/–ve effects)
Patient	Patient health knowledge	✓	✓	✓
	Acuity of illness		✓	
	Level of consciousness and communication	✓	✓	✓
	Length of stay in ICU		✓	
	Age, gender, weight and language	✓	✓	✓
	Patient behaviour	(e.g., cooperative)	(e.g., uncooperative)	✓
	Prolongation of patient's life		✓	
	Objectification of patients		✓	
Family	Family involvement in nurses' provision of care and vice versa	✓	✓	✓
	Family culture		✓	
	Family conflicts		✓	
Nurse	Educational background and experience Employment type Leadership styles Relationships Personal factors	Teamwork (support) Camaraderie and collegiality Unit Manager appreciation Variety/flexibility of shifts and roles Involvement in patient's life and family Personal motivators	Busyness, tidiness and shortage of time for caring) Extra workload (staff 'chasing their tails') Personal problems (detract from caring)	✓
ICU Environment	Layout/design of ICU environment	✓	✓	✓
	Noises and distractions		Patient sleep deprivation Distractions during handover	
	Resource availability	Availability of staff, equipment and finance Having students (assistance and observations) Technology (accuracy, life and time saving)	Shortage of staff, equipment and finance Having a student (extra burden, exhausting, time-consuming) Technology (time-consuming, takes attention from patients)	✓
	Nurse-to-patient ratio	Close and continuous observation		

4. DISCUSSION

The study analysis highlighted many factors that impacted the quality of care in the ICU. These factors either enabled or challenged nurses in providing their practice in ICU. Sometimes, these factors could be considered both enablers and challenges for nurses' caring in ICU at the same time, as

displayed in Table 2.

4.1 Enablers to caring in the ICU

In relation to patients, the awareness of ICU patients about their health status and having sufficient knowledge and information can assist in providing care for those patients, which will assist in their understanding and compliance.[37,38] This is consistent with the findings of the current study. However, there is always an issue with how much information will be beneficial for patients. Chevillon, Hellyar, Madani, Kerr and Kim[39] conducted a prospective, randomised controlled trial with multifaceted preoperative education that improved postoperative knowledge and reduced the days of mechanical ventilation among pulmonary thromboendarterectomy patients in ICU. However, some ICU patients are unexpectedly admitted to ICU due to severe traumas and accidents or complications of surgery or anaesthesia, so they never had the required knowledge or information about their health status or ICU environment prior to their admissions. Assessing the patient's level of knowledge and how much information is going to be beneficial or distressing was an important consideration for participants in the current study, which was succinctly found in the literature as the delivery of patient information is most efficient and meaningful when it is provided in small quantities to decrease cognitive load, and well-timed in accordance with a patient's readiness to learn.[40,41]

The criticalness of the patient's illness affects the provision of caring for the ICU patients. For example, caring for the physiological needs have to be addressed first as nurses are too busy in stabilising and maintaining life support for the patient, where it is hard to manage their psychological needs at that time.

Communicating with ICU patients depended on their level of consciousness. For the patient who was cognisant of their surroundings and able to communicate with staff, the length of interactions was significantly long, and the nurses were more engaged with those patients, sharing information and responding to their enquiries. These findings are similar to Alasad and Ahmad's (2005)[42] study findings that nurses communicated more with conscious patients. Another enabler was discussed by Jones, Winch, Strube, Mitchell and Henderson,[43] who explored nurses' perceptions of enablers in delivering compassionate care in ICU and considered the relationship with patients determined nurses' ability to respond and communicate compassionately in their caring. This is congruent with the findings in the current study. Additionally, nurses viewed patients' behaviour as considerably influencing the provision of care, where the compliant patient facilitates the caring process.

In terms of the patients' gender preferences, both male and female nurses were available upon request. Regarding elderly patients' preferences to be cared for by mature and experienced nurses irrespective of their gender, 85% of the nursing staff were mature and expert ICU nurses, which was easy to fulfil the patients' required needs.

In relation to family, family involvement in nurses' provision of care and vice versa are considered as enablers assist nurses in caring for the family were being informative and supportive, providing explanations and reassurance, listening, and being present and professional.[44,45] These findings are consistent with those of the current study, in which nurses were attentive to the needs of family members in a sensitive and professional manner as relatives struggled with their feelings of shock, fear, uncertainty and sense of powerlessness to change the situation. Leon and Knapp[46] pointed out that families of critically ill loved ones experience a gamut of emotions, including shock, fear, anger, sadness, vulnerability and powerlessness as they struggle to reconcile with what has happened. In such situations, nurses worked with the families in providing information about the family member's health status, being supportive and available to answer any questions or concerns and involving family members in the daily care of their family member. Similar findings were identified in by Karlsson and Forsberg[47] and Imanipour and Kiwanuka[48] studies, where family presence and involvement was considered an important element in caring for the family while simultaneously enhancing the quality of care provided by staff. For example, the presence of a patient's family in ICU can play valuable roles in the delivery of high-quality EOL care, such as information providers, providing psychological and emotional support for the patient.[43,49] These findings are congruent with the findings of the current study as the involvement of family in the care of their loved one was considered by participants as important for both patients and their families in providing a counterbalance to feelings of powerlessness and uncertainty. Family nursing and involvement in critical care settings is indispensable and should be included in nursing curriculums and continuous professional development training for ICU nurses.

Åsa and Siv,[50] Blanchard and Alavi,[51] and Buckley and Andrews[52] identified the closeness of the family members to the critically ill patient as an important factor in the provision of care within the unit. In addition to providing psychological and religious support to families.[53–55] Participants in the current study explicated that families of ICU patients rely heavily on open communication between themselves and the treating team, which was considered core to building a trusting relationship. Having such a relationship was considered imperative by nurses in working with the family to facilitate

understanding of the patient's condition and prognosis, especially at the EOL stage. Similar findings were reported in several other studies,[56–58] in which the importance of communication with patients' families was emphasised.

In relation to the ICU environment, participants in the current study pointed to the importance of having an environment that assists nurses to care physically for patients. The nurses in the current study highlighted to important factors in the ICU environment such as availability of staff, equipment and finance, having students (for assistance and observations), technology (for accuracy, life and time saving), nurse-to-patient- ratio (for close, continuous observation and caring). In the literature, one of the important structural elements of ICUs linked to a healthy practice environment was a physical layout that allowed constant observation and immediate access to patients.[59] Furthermore, caring for the safety of patients was an issue reported by many nurses in the current study. To ensure the safety of patients, collaboration with other members of the unit and working in a spirit of cooperation and support was considered key to enabling nurses to provide quality and safe patient care. Similar findings were identified in a qualitative study conducted by Berland, Natvig and Gundersen.[60]

4.2 Challenges to caring in the ICU

In relation to patients, several topics have been researched based on nurses' experiences and challenges in critical care settings, and the findings of these studies are congruent with the findings of the current study. For example, nurses in the current study indicated that the acuity of illness was a challenge of caring in ICU, which is similar to the findings of Alasad[61] and Butt[62] studies. These have included nursing care of critically ill patients, age of the ICU patients such as older adults,[63,64] the weight of the patients as obese patients,[69,70] providing post-mortem care for the body and family[67,68] as well as their perceptions of, and responses to end-of-life care,[69,70] ethical and moral distress decisions[71,72] and withdrawal/withholding of treatment in the ICU, which are significantly sensitive topics.[73,74]

The lack of patient cooperation and patient's behaviour significantly affected the ability of nurses to provide quality care, as reported by nurses in the current study. This was also noted by Verdon, Merlani[75] and Jones, Winch.[43] Nelson et al.[76] indicated that poor communication between ICU patients and health professionals could be a barrier in providing care at the EOL stage, specifically when patients are sedated or unconscious and unable to communicate their wishes to the health team. Also, caring for ICU patients displaying agitated behaviours can be both challenging and demanding, where some nurses thrive with the challenges, and others struggle to show negative attitudes and seek practical and emotional support to figure and provide the best caring practices.[77] Therefore, understanding the rationale of the ICU patients' incompliance and agitating behaviours, increasing the guidance and knowledge for nurses, and developing best nurses' practices could prevent and manage these agitated behaviours to ensure optimal care and effective collaboration.

The need to discharge patients earlier was considered a practice that did not assist the expression of compassion in nurses' compassionate caring[43] as the nurses expressed in the current study that insufficient caring for patients is due to the shortness of their stays and the high turnover in ICU. Interestingly, the nurses in the current study considered the shortage of patients' stay in ICU is a challenge in providing quality care for the patients- as if the nurses would like to give enough or continuous care to the patients before discharge.

Bernard, Whitaker[78] study demonstrates that critical care nurses and physicians perceive language barriers with patients as an impediment to quality care delivery and as a source of workplace stress. This is consistent with the current study's findings and other findings.[79,80] For example, non-English speaking patients often pose significant challenges for nurses to communicate with during their nursing care. In such situations, an interpreter or family members were engaged,[81] similar to the current study findings.

In the current study, participants in the handovers called their patients by their bed numbers, cases or diagnosis, rather than referring to them as a person, despite advocating for a person-centred approach to care within the unit. This was evident in Shimizu, Couto[82] cross-sectional descriptive study that analysed the causal factors of pleasure and suffering in ICU nurses and compared the occurrence of these factors at the beginning and end of their career. A number of studies revealed that nursing care had been missed due to patient's acuity, dehumanisation of the patient and communication with patients about end-of-life care.[14,17,19–22,83–86] Furthermore, the language barrier also was identified as barrier in the current study, which was found in other studies.[78,87,88]

In relation to family, the current study findings indicated that family dynamics concerning grief and loss, family discord in decision-making about treatment options, family vulnerability and level of family involvement in the care of their loved one were impediments to the provision of quality care. These were congruent with the findings of McConnell and Moroney[89] and Minton and Batten[90] studies that examined CCNs' experiences of family involvement in ICU patient care that affect the ability to care. The fragility and vulnerability of family trying to come to terms with their loved one's health status and uncertain future was a major challenge for

nurses, which at times left them feeling insecure and reticent to perform tasks in the presence of relatives. Being fragile and feeling vulnerable as a result of the family's response to their relative's health status and uncertainty of what may lie ahead could restrict relatives in assisting in the provision of care. Also, participants identified family involvement as a challenge where families displayed behaviours as asking too many questions, insisting on curative treatment, or challenging clinical decisions, specifically in delivering the EOL care, which is consistent with other studies findings.[23,91]

A further consideration in developing a trusting, supportive relationship with the family was in the area of family conflict. In the current study, a difficult challenge faced by participants was working with family members in situations of family conflict or disagreement about the health status of the patient and individual family members' roles in caring for and being part of the decision-making process.[56,92] Some studies revealed that nursing care has been missed due to communication between nurses with patients' families, and specifically about EOL.[14,17,19–22] For example, nurses should maintain open communication with family members, especially monitoring their choice of words and the timing of conversations while comforting the family throughout the bereavement process and providing a physically and emotionally supportive environment. Therefore, nurses need to take a significant role in EOL care in family conferences and decision-making,[93] similarly with the current study's findings.

In relation to the ICU environment, participants in the current study identified several challenges in caring for patients. These included having to contend with the physical layout of the unit, which was significantly constricting with little room to move, the close proximity of patients, continuous noise created by staff as they went about their business, technological noise of machines such as ventilators and cardiac monitors, and the unrelenting yet essential presence of light 24 hours a day, all of which had the potential to affect patients' sleep deprivation, and ability to rest and heal. In addressing these challenges, the researcher noted that disposable blue curtains were used to induce a calming effect on the unit and dimming of lights from 2–4 pm was a part of the daily pattern of care to allow patients to rest without the distraction of staff and family. The staff took extra precautions to minimise contact with their patients at this time without compromising care and treatment.

Unfortunately, little could be done with respect to mechanical noise on the unit. Several studies were located that identified similar findings to those of this study. Coles,[94] Samuelson[95] and Yava, Tosun[96] referred to the challenges of the presence of advanced and complex technology required for monitoring and managing the health status of patients and the accompanying noise of machines, the presence of lights throughout the unit, the ongoing buzz of staff carrying out their responsibilities and, at times, the chaotic atmosphere on the unit when patients required immediate emergency interventions such as resuscitation. Redden and Evans[97] found that in meeting such challenges, nurses attempted to make the environment as comfortable as possible by reducing the number of times patients were disturbed, removing restraining devices where possible and appropriate, and ensuring that periods of the day were devoted to creating a quiet time for patients to rest. Wilkin and Slevin[98] study also identified that the presence of high technology essential for patient care was a major challenge for nurses and other members of the treating team, in an environment where much of the care of patients is technology driven.

The lack of appropriate space to provide care, noise level, privacy, and safety can have a significant negative impact on the patients' illness experience, well-being and the process of recovery. Therefore, a review of the layout of the ICUs needs special consideration for optimal caring to patients, families and nursing staff.

Overall, nurses in the current study highlighted various enablers and challenging factors that impacted caring for ICU patients. The caring in ICU was impacted by different interrelated factors that are related to ICU patients, patients' families, and the ICU environment, which means that caring for patients in ICU is not relying only on nurses. It is worthy to note that some of these factors can be considered both as enablers and challenges simultaneously. Examples from the patient's side were the patient's health knowledge, level of consciousness and communication, age, gender, weight, language, and behaviour. From family's side, family involvement in nurses' provision of care, and finally from ICU environment: layout of ICU environment, and resources availability. These enablers and challenges of caring in ICU should be undertaken into consideration of the relevant stakeholders in clinical, education, research, and management of critical care nursing and possibly in other nursing disciplines.

5. Conclusion

This paper is the first in a two-part series that comprehensively and extensively explores the enablers and challenges to caring in the ICU from different perspectives regarding patients, families, nurses, and the ICU environment. This part highlighted the enablers and challenges that are only related to ICU patients, families and environment. For patients, the patients' knowledge of their health status, condition acuity, level of consciousness, length of stay in ICU,

age, gender, weight, language, patient's behaviour, prolonging of life and objectification. Numerous recommendations needed to be undertaken for patients, such as educating and providing information; involving patients in their treatments and decision-making; considering patients as humans; and overcoming obstacles related to these issues. For families, family involvement in the provision of care, the family's culture, and family conflict. Therefore, involving the family in their patient's care is imperative for patients, families and nurses, and other health professionals. In addition to resolving any family conflicts. For the ICU environment, ICU layout, noises and distractions, resources availability, and nurse-to-patient ratio, nurses and stakeholders need to address these factors when establishing critical care settings and caring for patients, families, and health professionals in the ICU.

Furthermore, ICU nurses must have access to training and educational opportunities and emotional and psychological support from their colleagues and managers in order to provide the highest quality care to ICU patients, families, nurses and other health team members. There is a necessity to investigate the multi-factorial enablers and barriers from stakeholders such as ICU patients, families, and multidisciplinary teams and the ICU environment to achieve sustainable improvement in the quality of care and caring provided in critical care settings. Additionally, the findings of this study need to be considered by all stakeholders as clinicians, educators, researchers, managers, and policymakers to enhance enablers and preclude challenges to caring in ICU. Awareness of these factors can provide understanding for the daily challenges nurses face, thus informing nursing management that supports nurses advocating at higher levels for resources to provide necessary environments and strategies to reduce missed care and can facilitate interventions to maintain the optimal level of caring in ICU. Finally, part two of this series will explore the enablers and challenges to caring that are related to the ICU nurses.

Conflicts of Interest Disclosure

The author declares that there is no conflict of interest.

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