

Challenges and Barriers to Providing Care to Older Adult Patients in the Intensive Care Unit: A Qualitative Research

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Abstract

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BACKGROUND: Enhancing the quality of care for elderly patients needs an understanding of the challenges and obstacles experienced by the intensive care unit (ICU) staff in providing care.

AIM: To explore the most challenging issues experienced by ICU staff, in particular, nurses, in the care of elderly patients in the general adult ICU.

DESIGN: A qualitative research design was employed. The Standards for Reporting Qualitative Research (SRQR) were followed.

METHODS: Based on theoretical sampling, we carried out 34 in-depth semi-structured interviews from two medical adult ICUs. Data analysis was carried out using qualitative conventional content analysis.

RESULTS: Data analysis led to the identification of three interrelated categories and 12 subcategories. Three main categories were factors related to nurses' attitude in elderly care, factors related to the system of care, and factors related to the models of patient care delivery. These categories came under the main theme of "Inappropriate and unfair system for elderly care".

CONCLUSION: The findings of this study increase scholarly understanding of challenges and barriers to providing care to elderly patients in the general adult ICU. We found that the provision of care to elderly patients is inappropriate and unfair. Various obstacles must be overcome to improve the care of these patients. For example, negative attitudes toward elder care, inappropriate environments, lack of resources, lack of knowledge and skills, a specialized model of care delivery, respect for humanity, care without considering patient age, and separating professional conflicts from patient care. These findings may be used by ICU's caregivers and managers to improve the quality of care.

IMPLICATIONS FOR PRACTICE: Various obstacles were documented that need to be overcome by hospital administrators, nursing managers, clinical nurses, nursing educators, nursing researchers to improve the care of elderly patients admitted to ICU.

Introduction

Recent advances in the treatment of diseases have led to an increase in human life expectancy and an increase in the population of older adult people with multiple chronic diseases [1]. According to an official World Health Organization (WHO) report, Iran's population aged 60 and over in 2015 was about 10 per cent of the total population, which is expected to increase to more than 33 percent by 2050 [1]. According to the Iranian Census Bureau, the age distribution of the country's population is changing

very fast from youth to old age [2]. Given the rapid growth rate of the elderly population in the coming years, there is a growing need for future planning to control the health of this population. However, the evidence suggests that due to the inadequacy of care processes and structures, the current healthcare systems in most countries of the world, including Iran, are unable to meet the complex needs of elderly patients suffering from various disabilities [3]. Regarding the process of care, the results of previous studies show that healthcare providers, including nurses, do not have the required and sufficient abilities to manage the physical and psychological

needs of hospitalized elderly patients [4].

To provide specialised care to elderly patients, it is necessary for the healthcare system to make appropriate changes in the structure and process of providing services to these patients [5]. Also, it is imperative that the nursing services system, which is primarily responsible for patient care, undergo fundamental changes in the care of this vulnerable group [6].

One of the hospital wards, where elderly patients are frequently admitted, is the intensive care unit (ICU), which is one of the expensive, invasive, and intensive settings in hospitals [7]. Care of elderly patients admitted to ICU is fundamentally different from younger patients because the care of them requires specialised knowledge and skills [8], [9]. They need more complex care than other patients because of the coexistence of several chronic diseases [10]. Evidence suggests that advanced age is associated with worsened outcomes and increased mortality in critically ill patients admitted to ICU [11]. Also, the length of hospitalisation of elderly patients in ICU is longer than in other wards [12], [13]. Prolonged hospitalisation is associated with the occurrence of new complications and disorders; therefore, it requires advanced care, which can increase treatment costs in the absence of clear benefits [14], [15]. Because of the futility of care, there is some evidence that ICU caregivers do not pay enough attention to the care of elderly patients in some cases, and most of the care they provided to elderlies is routine and palliative [8], [16]. Furthermore, due to the high mortality rates of elderly patients in ICU, admission, hospitalization, and care of them face challenges [17]. For these reasons, there have been considerable debates about whether to admit patients with limited life expectancy to ICU, such as elderly patients with significant chronic diseases [18].

Among ICU caregivers, nurses play a key role in maintaining and promoting the health of various groups of critically ill patients, including the elderlies, by providing advanced care [19]. However, the barriers to the care of elderly patients admitted to the ICUs have not yet been fully elucidated. Enhancing the quality of care for elderly patients needs an understanding of the challenges and obstacles experienced by the ICU staff in providing care. It is necessary to explore the ICU caregivers' perspective and experience regarding barriers to care for elderly patients. Understanding these experiences can help develop interventions to improve the provision of care for elderly patients and improve their quality of life. Therefore, the aim of this qualitative study was to explore the most challenging issues experienced by ICU staff, in particular, nurses, in the care of elderly patients in the general adult ICU.

Methods

Research design and participants

This study was conducted by a qualitative research method. Using purposive sampling, nurse participants with at least one year of work experience in the ICU were eligible to participate in the study. Maximum variations in sampling in terms of various socio-demographic and educational status were considered during the recruitment of the participants. Also, patients' family members and healthcare professionals who worked at ICU were interviewed using theoretical sampling. The number of interviews was guided by reaching data saturation. Finally, data saturation was reached with 34 participants (26 initial interviews and 8 additional interviews as member check). The study was conducted between June 2017 and June 2019 within two ICUs of * hospital, a principal referral center in northeast **, which is affiliated to the ****, ***, **.

Data collection

In-depth semi-structured interviews were conducted by the first author (HSH) who is a fourth-year doctoral student in nursing and was highly trained in qualitative interview processes and techniques. Participants were directly contacted and informed of the purpose of the study. All the interviews took place face-to-face at a date and time that was most convenient to participants, conducted in Persian and were audio taped. Interviews lasted between 25 and 85 minutes (mean: 46 minutes). The interviews began with the general open-ended question: "What factors affect the provision of care to elderlies admitted to the ICU?" The interviews continued with the question "How do these factors affect treatment and care outcomes?" Participants were asked to share their experiences regarding main barriers to and facilitators of caring for elderlies in the ICU. The interviewer used probing questions to clarify a situation or to provide detail to an answer (would you explain further? could you give an example of what you mean?). In addition, in-field notes were taken to cover untold aspects of the elderly care.

Data analysis

All the interviews were immediately transcribed verbatim. The transcripts were read by the authors several times to get insight into the participants' experiences. Thereafter, they were analyzed using conventional content analysis according to the technique described by Hsieh and Shannon [20]. Data were coded, and related codes were finally grouped under certain categories by using the constant comparative analysis. After each new interview, the previous categories were either revised,

combined, or a new category was shaped. All of the authors contributed to categories development through face-to-face meetings. The MAXQDA (Version 10) was used to organise, code, and manage the data.

Ethical considerations

Ethical approval for the study was obtained from an institutional ethics committee affiliated with **** (decree number: "number comes within title page."). Participation was voluntary, and the participants provided their consent to participate. All of the interviews were audiotaped with the consent of the participants. The participants were assured that their information would remain confidential and they had the right to withdraw from the study at any time.

Methodological rigour

Lincoln and Guba's criteria for trustworthiness, including credibility, transferability, dependability and confirmability, were used to ensure the trustworthiness of this study [21]. These criteria were established through a 24-month engagement period in the research setting, providing thick descriptions illustrating the participants' lived experiences, peer debriefing, member checking (the participants were invited to attend a peer review to establish the initial coding of initial interviews), recording the decision trail throughout the data analysis process, recording the interviews and transcribing them immediately after each interview. Furthermore, to expand the transferability of the data, the participants' quotes were presented verbatim.

Results

As shown in Tables 1, 26 participants with maximum variation were interviewed. 16 participants were female and 10 were male. 8 participants were re-interviewed (member check). Due to the gender distribution of ICU nurses, the majority of nurses were female, and therefore, the majority of participants in this research project were female. The mean age of the participants was 36 years (ranged from 26 to 52 years). ICU nurses were the main participants in this study. However, data analysis led to planning for interviews with other caregiver members. Accordingly, the participants included the staff involved in elderly patient care including nurses (at least Bachelor of Science in Nursing degree), physiotherapists, intensive care specialists, anaesthesia residents, and patient family members. The mean duration of the interview was 47 minutes (ranged from 25 to 85 minutes).

Table 1: Participants profile in the initial interviews

Row	Interview time(min)	Gender	Age	Profession	License	Work (year) ICU	experience Total
1	37	Female	31	Nurse	Master	1	5
2	37	Female	34	Nurse	BSN	3	7
3	44	Female	37	Nurse	BSN	5	13
4	54	Female	36	Nurse	BSN	8	13
5	45	Female	35	Nurse	Master	7	10
6	33	Female	36	Nurse	Master	8	10
7	52	Female	44	Nurse	BSN	7	12
8	85	Male	32	Nurse	BSN	6	9
9	55	Male	38	Nurse	BSN	10	14
10	50	Female	33	Nurse	BSN	7	7
11	57	Female	33	Nurse	Master	3.5	8
12	44	Female	39	Nurse	BSN	7	7.5
13	47	Female	35	Nurse	Master	10	12
14	40	Female	33	Nurse	BSN	10	10
15	45	Female	36	Nurse	BSN	8	8
16	50	Female	34	Nurse	BSN	2	11
17	45	Female	37	Nurse	BSN	8	8
18	55	Male	29	Nurse	BSN	3	7
19	57	Male	32	Nurse	BSN	9	11
20	45	Male	52	Nurse	BSN	24	27
21	25	Female	42	Physiotherapist	BSN	10	15
22	35	Male	26	Nurse	BSN	7	8
23	42	Male	34	Nurse	BSN	8	10
24	45	Male	46	Nurse	BSN	11	12
25	40	Male	37	Doctor	Anesthesiologist	2	5
26	45	Male	38	Nurse	BSN	6	7

Specifications of participants in the re-interview

Row	Interview time(min)	Gender	Age	Profession	License	Work (year) ICU	experience Total
1	25	Female	31	Nurse	Master	1	5
2	20	Male	46	Nurse	BSN	11	12
3	30	Female	37	Nurse	BSN	5	13
4	34	Male	36	Nurse	BSN	8	13
5	24	Female	35	Nurse	Master	7	10
6	20	Male	29	Nurse	BSN	3	7
7	15	Male	37	Doctor	Anesthesiologist	2	5
8	35	Male	38	Nurse	BSN	6	7
Statistics							
Mean	42	-	36	-	-	7	10
SD	14	-	5	-	-	4	4
Min	15	-	26	-	-	1	5
Max	85	-	52	-	-	24	27

According to the participants' experiences, several challenging factors influenced the care of elderly patients in the general adult ICU. These factors were organised into three interrelated categories and 12 subcategories as follows: factors related to nurses' attitude in elderly care; factors related to the system of care; factors related to the models of patient care delivery. We put these categories under the main theme of "Inappropriate and unfair system for elderly care". Table 3 shows the main theme, categories and their subcategories regarding the challenges of elderly care in the ICU. Table 2 shows the challenging factors affecting the care of elderly patients in general adult ICU.

Table 2: Challenging factors affecting the care of elderly patients in the general adult ICU

Main theme: Inappropriate and unfair system for elderly care	
Factors related to nurses' attitude in elderly care	
A negative bias towards the elderly	Priority for non-elderly patient care Poor response to care and treatment Complexity and time-consuming care Prolonged hospitalisation Higher mortality rate Crossing the "life expectancy" limit
The unfavourable working atmosphere for elderly care	Decentralisation of care for the elderly The futility of care Useless discharge of the elderly Delayed and incomplete care
Factors related to the system of care	
Stressful environment	The stressful, emotional environment Stressful physical environment
Improper management policies	Nurse isolated from the patient's bedside Resource constraints (human/financial) Double nurse pressure
Non-constructive inter-professional communication	Improper interdisciplinary cooperation The passive role of the nurse in the care team
Intra-professional conflict	Lack of intra-professional differentiation Professional disappointment and dissatisfaction
Factors related to the models of patient care delivery	
Inappropriate patient assignment method	
Inappropriate nursing handover styles	
Inappropriate model of care delivery	
Lack of specialised model of elderly care	
Task-oriented nursing care	
Lack of specialised knowledge of elderly care	

Factors related to nurses' attitude in elderly care

A negative bias towards the elderly care

The attitude and belief of the intensive care unit's caregivers towards elderly patient care are biased and prejudiced.

Priority for non-elderly patient care

Based on the participants' experiences, care of elderly patients, particularly those with complicated vital conditions, is not a high priority in the ICU. In this regard, a participant stated, "in the ICU, many elderly patients have an irreversible vital condition and are unlikely to survive. That's why they are not a priority in care." (P4).

Poor response to care and treatment

Inadequate response of these patients to the treatments and care provided by the medical and nursing staff has led to a decrease in the quantity and quality of care for them. A participant stated, "although standard care and treatments are provided for the elderly, they do not respond to treatments. For this reason, as the length of hospitalisation increases, the quantity and quality of care gradually decrease." (P7).

Complexity and time-consuming care

Elderly patients suffer from multiple diseases at the same time, which makes it difficult and time-consuming to care for patients. This has made the nurse reluctant to care for these patients. A participant stated, "I don't want to care for these patients at all because they have complex diseases, the care of these patients is very heavy and frustrating, and in the end, you will not get any results." (P11).

Prolonged hospitalisation and higher mortality rate

Long-term hospitalisation of these patients is associated with the occurrence of several complications that can ultimately increase the rate of patients' mortality. A participant stated, "these patients have been hospitalised for a long time without significant improvement. Because of organ failure and irreversible complications, most of these patients die and the resources spent on caring for these patients are wasted." (P1) Another participant stated, "as most of the elderly patients have multiple chronic diseases, they face a higher mortality rate in spite of receiving standard care." (P5).

Crossing the "life expectancy" limit

Based on the participants' experiences,

patients who live longer than average life expectancy and have multiple concurrent disabling diseases are not in a high priority for care. A participant stated, "in the ICU, I have to say some age boundaries have occurred in the care of patients. Usually, patients over eighty years of age are not much considered. Even their admission to ICU is negligible. These patients have passed their useful life and the limited equipment should be used to save the lives of non-elderly patients." (P13).

The unfavourable working atmosphere for elderly care

A persistent gap between ICU bed supply and demand has led to the creation of the unfavourable working atmosphere for elderly care in terms of quality and quantity of care. There is a hidden working atmosphere assumes that caring for terminally ill elderly patients in the ICU is a futile task. This hidden working atmosphere has also created the attitude that the continuity of care for these patients is a factor for further discomfort and distress.

Decentralisation of care for the elderly

Based on the participants' experiences, care of the elderly with a complex or terminal life condition is not at the centre of care and it is insignificant. A participant stated, "here, fewer persons care about the critically ill elderly with a terminal illness. All staff are focused on improving young patients and those with reversible vital status." (P19).

The futility of care

The attitude of most participants was the futility of intensive care for the elderly. They believed that intensive care would only increase the suffering of elderly patients while not improving the outcomes and quality of life of these patients. Also, the continuity of care for the elderly with terminal illness imposes substantial costs on the family and the healthcare system. A participant stated, "when the patient can never come back to life, continuing care is useless and only causes the patient to suffer." (P2).

Useless discharge of the elderly

Elderly patients are admitted to ICUs for a long time. During prolonged hospitalisation, new and irreversible diseases and complications occur. Among those elderly, a limited number of them will be discharged, of course, along with severe disabilities. Participants believed that the prolonged hospitalisation of these patients would only lead to continued suffering and increased economic costs to the family. This underlying belief has led to a decline in the quantity and quality of care provided to the

elderly patient. A participant stated, "If an elderly patient can survive ICU, he / she will be discharged with severe neurological and skeletal complications that make life very difficult." (P9).

Delayed and incomplete care

Perception of the futility of elderly care has led to a delay in providing care, which is also done incompletely. A participant stated, "sometimes care is delayed because they are repeated and only routinely delivered to the patient. No one is looking for results. For example, if a blood sample is needed, it is delayed because the test result is not followed up." (P12).

Factors related to the system of care

Stressful environment

Stress can have agonizing effects on both elderly patients and ICU staff. Based on the participants' experiences, there are several sources of stress in the ICU setting, which can alter the health outcomes of elderly patients, who are a very vulnerable population. Both the elderly patient and the nurse are exposed to these environmental stressors. The nurses stated that the quality of care in such a stressful environment would not be optimal.

The stressful, emotional environment

There are several factors in the ICU that cause emotional stress to nurses, which in turn can affect the quantity and quality of care provided to the elderly patient. Main emotional stressors were feelings of hopelessness following frequent deaths of patients, mental exhaustion from working in the ICU, endless compassion for patients and their families, verbal tension with nursing colleagues and managers, nursing managers' neglect to the high working tension in the ICU. For instance, nurses' mental exhaustion caused them to become impatient and being frustrated during the working shift, and thus, to provide incomplete care for elderly patients. In this regard, a participant expressed, "when you are very tired and frustrated, you do not care about a terminal elderly patient" (P6).

Stressful physical environment

Elderly patients are vulnerable, and their admission to the ICU increases the severity of the vulnerability. Based on the participants' experiences, several physical and structural factors contribute to increased vulnerability of elderly patients. Continuous lighting, annoying noise pollution, and inadequate physical environment for care were among those factors, which can affect all aspects of mental and physical health of elderly patients.

Improper management policies

Based on the participants' experiences, numerous management policies have reduced the quantity and quality of care provided to patients, including the elderly.

Nurse isolated from the patient's bedside

Most participants deeply expressed their concern that nurses were shifted from patient's bedside to the bureaucratic paperwork, such as frequent documentation of routine events into the hospital information system that focuses mainly on the administrative needs of hospitals. A participant stated, "according to the inappropriate policies of the nursing authorities, most of what we do is paperwork. During the shift, we visit the patient two or three times; then our job is to keep track of events in multiple registries." (P17).

Resource constraints (human/financial)

According to the participants' experiences, the presence of multiple resource constraints, either human or financial, negatively affected the provision of care to all patients in all hospital settings, and elderly patients are also no exception.

Double nurse pressure

Nurse shortage or the non-employment policy has led to additional pressure on nursing staff. The experiences of the participants indicated that too much nursing work has led to physical and mental fatigue, which negatively affected the quantity and quality of care. A participant stated, "we have to do a lot of overtime to compensate for the shortage of nursing staff. Working overtime made us mentally and physically fatigued, and thus has reduced the quantity and quality of care provided to elderly patients." (P10). Another participant stated, "nursing is a low-paid job; thus, nurses need to work overtime to get paid more. That is why they are more stressed and tired." (P3).

Non-constructive inter-professional communication

Improper interdisciplinary cooperation

Many nurse participants complained that they had not been actively involved with patient care by physicians. They stressed that an unexplained absence of nurses could lead to a decline in the quality and quantity of care provided to elderly patients. A participant stated, "some physicians visit the patient alone and do not coordinate new orders with the patient's designated nurse." (P8). Another participant stated, "physicians' neglect to the presence

of nurses and nursing's reports indirectly lead to a decline in the quality of care for elderly patients." (P14).

The passive role of the nurse in the care team

Based on the participants' experiences, the passive role of nurses in the care team has a significant impact on the quality of care provided to complex patients in ICU, including elderlies. A participant stated, "the quality of care provided to the patient will improve if our role becomes more active in the healthcare team. At present, we are only sheer obedient to the physicians' orders." (P15).

Intra-professional conflict

The intra-professional conflict within nursing was also one of the factors that indirectly affected the quantity and quality of care provided to the patient.

Lack of intra-professional differentiation

If the positive personal and occupational characteristics of a dutiful nurse are ignored by their authorities, the nurse realises that the quality and quantity of care provided to the patients are of no value to the nursing authorities and therefore, she no longer attempts to improve the quality of care. A participant stated, "in our nursing profession, there is no difference between an experienced nurse and a novice nurse, between a dutiful nurse and an irresponsible one. There is no significant differentiation. No more motivation to work hard. Why should I try to take better care of elderly patients with end-stage disease?" (P16).

Professional disappointment and dissatisfaction

Nurses were dissatisfied and disappointed with their profession for many reasons, including income, social status and professional autonomy. Dissatisfaction had indirectly reduced the quantity and quality of care provided to elderly patients in the ICU setting. A participant stated, "hardship and difficulty of nursing and its low income have produced strong dissatisfaction among nurses. The prerequisite for quality patient care is to provide the welfare of nurses first." (P20).

Factors related to the models of patient care delivery

Inappropriate patient assignment method

The patient-to-nurse assignment was another factor that affected the quantity and quality of care. In the ICU, the principal criteria for assigning a patient to a nurse were the proximity of the two beds and the

complexity of care. In the next shifts, the patient was cared for by a new nurse. Thus, the continuity of care was disrupted. A participant stated, "the assigned patient to a nurse changes every shift, and we do not have a fixed patient that we can fully care for. This makes us unable to do the best for the patient." (P26).

Inappropriate nursing handover styles

One of the important things to maintain the continuity of care is a detailed handover of care responsibility of a patient to another nurse at the end of a working shift. Most participants expressed that there is no appropriate nursing handover style between nurses' staff in the ICU. A participant stated, "we do not have a style for patient handover to the next shift nurse. Patient handover is conducted orally and arbitrarily. It is unclear how nurses coordinate patient care across different shifts." (P24).

Inappropriate model of care delivery/lack of a specialised model of elderly care

The main model of care delivery was 'case method' (total patient care), in which one nurse was responsible for all aspects of the care of two patients during one particular working shift. That nurse worked directly with the patient, family and other healthcare staff in implementing a plan of care. According to the participants' experiences, this model (case method) is inappropriate for elderly patients hospitalised in the ICU. They stressed that these patients need a more specific model of care delivery in the ICU such as, 'nursing case management' or 'primary nursing' or 'patient-centred care'.

Task-oriented nursing care

Task-oriented and passive nursing care has led to the tedium of everyday nursing care in the ICU. A participant stated, "The nursing care we provide to elderly patients in ICU is often routine-based interventions and is more technical. We do not implement the nursing process for elderly patients because we do not have a dedicated system for the care of elderly patients." (P18).

Lack of specialised knowledge of elderly care

Elderly patients hospitalised in the ICU have advanced diseases. Caring of them requires specialised knowledge and skills. However, currently, these skills and knowledge have not been taught to nurses. A participant stated, "at the Faculty of Nursing, we have not been taught the knowledge of intensive care for the elderly patients and we have learned some important skills ourselves, of course, individually." (P23).

Discussion

In this qualitative study, we explored the most challenging issues experienced by nurses in the care of elderly patients in the general ICU. We organised these issues into three main inter-related categories and 12 subcategories as the following: "factors related to nurses' attitude in elderly care (negative bias towards the elderly care, unfavourable working atmosphere for elderly care); factors related to the system of care (stressful environment, improper management policies, non-constructive inter-professional communication, intra-profession conflict); and factors related to the models of patient care delivery (inappropriate model of care delivery, inappropriate nursing handover styles, lack of specialised model of elderly care, inappropriate patient assignment method, task-oriented nursing care, and lack of specialised knowledge of elderly care).

About the staff nurses, our findings support the need for a significant shift in the attitude of ICU staff in providing care for elderly patients, particularly those with end-stage disease. As most of the participants in our study reported, we found that the experience of caring for elderly patients over the past years has led to some implicit bias and prejudices against older adults in the provision of care by professional caregivers. These prejudices have diminished the quantity and quality of care provided to this group of patients. The most important factor underlying this negative attitude was the ineffectiveness of treatments and care for the elderly patient concerning survival and future quality of life. Although all elderly patients received standard care after being admitted to the ICU, many responded poorly to the interventions and eventually died. The frequent occurrence of these consequences over the years has tended to foster a negative attitude towards admission and hospitalisation of elderlies with advanced diseases. In line with our findings, previous studies found that the perception of futile care hurts caring behaviours of ICU caregivers toward elderly patients [22], [23], [24], [25].

According to the participants' experiences, the system for delivering intensive care to elderly patients is inappropriate in terms of environment, management policies, inter-professional communication, and intra-professional conflict. The ICU environment involves various dimensions of care to save patients' life by facilitating interpersonal communication among healthcare professionals [26]. Similar to our findings, previous studies found that the environment of ICU is very hostile for staff and the vulnerable critically ill elderly patients in terms of physical and mental stressors [27], [28], [29], [30]. In particular, the intensive care setting can be an obstacle to providing intensive care for long-stay elderly patients who have complex vital conditions [31].

Similar to our findings, due to the nature of the intensive care unit, numerous sources of conflict cause inconsistency between different members of the care team. Among these resources were uncertainty about the continuity of care for the elderly and the occurrence of ethical challenges in the resuscitation of elderly patients [26]. Poor interprofessional communication has negative impacts on patient outcomes [32].

Nurse participants expressed that because of the lack of professional autonomy, they excluded from direct patient care. They no longer have an active and autonomous role in the clinical team to make decisions about improving patient outcomes. In this regard, previous studies have shown that limited autonomy of nurses is a barrier to nurse-physician collaboration, which, in turn, negatively affects patient outcomes [33], [34].

We found that several factors made nurses dissatisfied with ICU work, including stressful work environments, increased work pressure, human resources constraint, poor nurse-physician relationships, inequality in pay, mandatory overtime and inadequate professional autonomy. Along with numerous factors related to the attitudes of staff and the system of care, as stated by participants, job dissatisfaction has negatively affected the quantity and quality of care provided to elderly patients. Similar to our findings, several studies have indicated high levels of job dissatisfaction and burnout among ICU nurses [35], [36]. Also, evidence suggests that organisational policies are linked with undesirable consequences in workforces [36], [37].

As our participants experienced, the model in which nursing care was delivered to elderly patients was inappropriate in terms of patient assignment method and nursing handover style between different working shifts. These issues negatively affected the quality and quantity of elderly care in the ICU. Previous studies in ICUs have emphasised that an optimal patient flow between different working shifts is critical to ensure a high quality of care and maintain care continuity [38]. However, similar to our findings, a recent Cochrane review revealed that the effectiveness of current nursing handover styles for ensuring continuity of care is unclear and uncertainty about the optimal handover style remains [39]. Regarding the model for delivering care to critically ill elderly patients, our participants highlighted a need for developing a specific care delivery model for elderly patients; because they had experienced that the 'case method' model was not suitable for the elderly patients. Based on the participants' experiences, a care model that maintains the nurse-patient relationship as much as possible is appropriate for elderly patients. In the literature, the study that examined the best model of nursing care delivery for the elderly in ICU was not found.

Another challenging issue for the care of the

elderly in ICU was that participants noted a lack of specialist knowledge of elderly care. They needed continuing education courses about issues related to intensive care for the elderly, including advanced care training for pressure ulcers, prevention of extremity deformities, mental relaxation of elderly patients, and management of elderly delirium.

There are some limitations to the present study that need to be addressed. In this study, all participants were enrolled from two ICUs within one hospital; therefore, the results may not be generalised to all ICUs who are admitting elderly patients. Also, the responses of participants regarding elderly care in the ICU might have been influenced by environmental factors, organisational culture and social acceptability bias, although an attempt was made to minimise this bias during interviews.

In conclusion, the findings of this study increase scholarly understanding of challenges and barriers to providing care to elderly patients in the general adult ICU. The challenging issues experienced by general adult ICU staff in the care of elderly patients were explored and organised into three main categories as follows: factors related to nurses' attitudes in elderly care, factors related to the system of care, and factors related to the models of patient care delivery. Ultimately, we found that the provision of care to elderly patients in the general adult ICU is inappropriate and unfair. Various obstacles must be overcome to improve the care of these patients. For example, negative attitudes toward elder care, inappropriate environments, lack of resources, lack of knowledge and skills, a specialized model of care delivery, respect for humanity, care without considering patient age, and separating professional conflicts from patient care. These findings may be used by ICU's caregivers and managers to improve the quality of care.

Summary statement of implications for practice

What does this research add to existing knowledge in gerontology?

- The attitude and belief of the intensive care unit's caregivers towards elderly patient care are biased and prejudiced.

- There is a hidden working atmosphere assumes that caring for terminally ill elderly patients in the intensive care unit is a futile task.

- The current system for the provision of care to elderly patients is inappropriate and unfair.

What are the implications of this new knowledge for nursing care with older people?

- The findings of this study increase scholarly understanding of challenges and barriers to providing care to elderly patients in the general adult intensive

care unit.

- The challenging factors in the care of elderly patients were related to nurses' attitude, the system of care, and the models of patient care delivery.

How could the findings be used to influence policy or practice or research or education?

- Various obstacles must be overcome by hospital administrators to improve the care of elderly patients, including inappropriate environments and lack of resources.

- Nursing educators should design and implement training courses for intensive care nurses and senior nurse students regarding the specific care of elderly patients.

- Nursing managers need to manage intra- and inter-professional conflicts and enhance the quality and quality of elderly patients care by creating a favourable environment.

- Nursing researchers need to work to find new models of care delivery for elderly patients admitted to the intensive care unit.

Authors' contributions

Study conception and design: HSH, AH, and ABM. Acquisition of data: HSH. Interpretation of data: HSH, AH, and ABM. Drafting of the manuscript: HSH, AH, and ABM. Critical revision of the manuscript for important intellectual content: HSH, AH, and ABM.

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