



# Provision of Care for Delirious Patients Hospitalized in Intensive Care Units: Nurses' Experiences

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## Abstract

**Background:** Delirium is the most common neurological diagnosis with a high occurrence among patients hospitalized in intensive care units (ICUs). Nurses should be able to connect with these patients and improve the prevailing mood in ICUs. Qualitative research attempts to discover people's views and thoughts and understand the depth of issues through their experiences. The present qualitative study aimed to explore ICU nurses' experiences of care provision for delirious patients.

**Methods:** The present study is a conventional qualitative content analysis of ICU nurses' (n, 27) experiences of care provision for delirious patients in Guilan Province, Iran in 2016. The study population was selected through purposive sampling, and the data were gathered through semistructured individual interviews, which continued until data saturation. Data analysis was performed in every stage, as recommended by Graneheim and Lundman. The strength and scientific accuracy of the study were evaluated, based on the Lincoln and Guba's criteria.

**Results:** Data analysis indicated 2 main themes and 6 subthemes. The main themes included "troubled relationships" (subthemes: "poor relationships", "inadequate support", and "categorized relationships") and "exhaustive care provision" (subthemes: "exhaustion from devotion", "occupational fatigue", and "fruitless caring").

**Conclusions:** Based on the results of the present study regarding nurses' care experiences for delirious patients in ICUs, patients can be relieved from disease-related tension, especially delirium, through strengthening nurse-patient relationships. Moreover, the staff's healthy relationship with one another, besides managerial support, can improve occupational relationships and provision of care services.

**Keywords:** Delirium, Intensive Care Units, Nurse, Caring, Qualitative Study, Iran

## 1. Background

According to the revised fourth edition of diagnostic and statistical manual of mental disorders (DSM-IV-TR), delirium is a type of disturbance in consciousness and a cognitive disorder. It occurs in a short period and is symptomized by changes in consciousness, decreased concentration and memory, disorganized behavior, rapid commencement within hours or days, and short-term uncontrolled fluctuations, especially at night (1, 2).

Delirium is the most common neurological diagnosis, with a high occurrence (92% - 98%) among patients hospitalized in intensive care units (ICUs) (3). Due to the involvement of several organs, use of painkillers and sedatives, and lack of visiting hours, the majority of patients in ICUs are exposed to delirium (4). Delayed diagnosis of delirium may produce the following problems: elongated hospitalization in the ward or ICU; increased risk of mor-

tality up to 22% - 76% (similar to mortality from sepsis or myocardial infarction); delayed weaning from ventilation; occurrence of nosocomial pneumonia; increased risk of relapse; risk of falling; urinary incontinence; skin disorders; permanent disabilities; lack of cognitive recovery (5); increased hospitalization costs; increased nursing workload; decreased rehabilitation; and patients' low quality of life (1).

Given its high prevalence, detrimental effects, and high costs, delirium is today one of the main concerns of ICU teams, especially nurses (6). Nurses should be able to connect with the patients and improve the prevailing mood in ICUs (7). Compared to physicians, nurses play a more important role in delirium prevention and diagnosis, as they spend more time with the patients and can identify the symptoms earlier (8). Therefore, they play an important role in the early diagnosis of delirium (9) and can satisfy these patients' physical and mental needs, as they

are well aware of them (7).

Although delayed or inaccurate diagnosis is one of the main reasons for lack of proper care provision for delirious patients, delirium remains undiagnosed or misdiagnosed in 66% to 84% of cases (10). Considering different limitations in the assessment of delirium, there is inadequate information on nurses' diagnostic performance and training for care provision. However, nurses' success in the assessment of delirium in hospitalized patients depends on their tendency towards a better understanding of the patients' conditions (11).

The necessity to acquire information on scientific and practical nursing theories for identification of patients' needs is one of the factors differentiating ICU nurses from others (7). In this regard, Devlin et al. aimed at measuring ICU nurses' understanding and performance with regard to delirium. The findings revealed that ICU nurses' understanding and current performance varied greatly (11). Moreover, Dadgari et al. revealed some other effective factors, such as nurses' educational level, attendance in special intensive care courses, continuous nursing education, and physical structure of hospitals (7).

Nobahar (2014) also showed that factors, such as proper environment, tools, equipments, and facilities, affect the quality of care provided by nurses (12). On the other hand, nurses need to establish proper relations with patients and their families, physicians, other nurses, healthcare team members, and healthcare centers so that they can provide better professional services (13). In fact, nurses' relationships in the work environment play a valuable role in the quality of provided services (14).

In general, qualitative research attempts to discover people's thoughts and ideas and understand the depth of issues through their perceptions and experiences (15, 16). Therefore, as the present study aimed at evaluating ICU nurses' experiences of care provision for delirious patients, the qualitative method seems to be appropriate for acquiring and analyzing data from the participants. The main research question was "What are nurses' experiences of care provision for delirious patients hospitalized in ICUs?" and the general objective was to explore nurses' experiences of care for delirious patients in ICUs.

## 2. Methods

The method was selected based on the main research question and objective. Accordingly, conventional qualitative content analysis was considered appropriate, as in qualitative research methodologies, the individual is considered as a whole with particular traits and the research focuses on his/her experiences. This study was conducted

in Guilan Province, Iran in 2016, and the relationship between nurses' ideas and opinions, main contents, tendencies, and meanings was studied. Then, the researchers extracted the key points and themes from these general relationships (17).

Using purposive sampling method, all eligible subjects who were willing to participate in the study were recruited. The inclusion criteria were willingness to take part in the research and tendency to share experiences. Moreover, nurses were included in the study if they could contribute to further clarification of the research question. Data were gathered through face-to-face semistructured interviews in private and convenient locations.

Before the interviews, the aim of the study was described to the participants. In addition, they were informed about their rights and were allowed to withdraw from the study at any time. The nurses were informed about their rights and were assured that their information would not be revealed during the study. Those who agreed to participate in the study were asked to sign the written informed consent forms.

The interviews were performed in 35 to 55 minutes. Data were collected until reaching data saturation, i.e., the point where the collected data only duplicate previous findings and no new information is acquired. To reach maximum variation in sampling, the participants were selected from a large group of nurses with different characteristics (e.g., age, educational level, and work experience). The interviews started with some open-ended questions, such as "If possible, please talk about your own experience of care for delirious patients hospitalized in ICUs". The next questions provided answers to the study questions for a better understanding of the subject.

The method suggested by Guba and Lincoln was applied for ensuring the study rigor (18). Dependability was confirmed through proper data collection and analysis, as well as audit trail by experts in the field. Dependability was also evaluated through prolonged engagement with the study phenomenon and peer checking by the participants. Additional comments by the university faculty members also increased the confirmability of the data. For transferability, a rich description of data collection and analysis was presented.

## 3. Results

The present study was conducted on 27 nurses, who shared their experiences of care provision for delirious patients in ICUs; the majority of nurses were females. All nurses were within the age range of 26 - 61 years and had different academic degrees (ranging from associate to master's degree).

A total of 715 primary codes emerged from the analyses. The codes were reviewed several times and categorized into 2 main themes and 6 subthemes, considering their similarities. The main themes included “troubled relationships” (subthemes: “poor relationships”, “inadequate support”, and “categorized relationships”) and “exhaustive care provision” (subthemes: “exhaustion from devotion”, “occupational fatigue”, and “fruitless caring”) (Table 1).

### 3.1. Theme 1: Troubled Relationships

Troubled relationships are one of the main experiences of nurses providing care for delirious patients in ICUs. Their experiences included poor relationships, inadequate support, and categorized relationships.

#### 3.1.1. Poor Relationships

Some nurses complained about inadequate relationships for providing care to delirious patients in ICUs. In this regard, one of the participants stated:

“As patients in ICUs have special conditions, close cooperation in these units is of great significance. Now, if a patient suffers from delirium, this relationship should become much stronger, which is not usually the case.”

Another participant stated:

“I don’t know whether it is because of exhaustion from work or lack of motivation, but sometimes our colleagues refuse to offer any help although they can see how busy we are with a patient with severe delirium.”

#### 3.1.2. Inadequate Support

Some participants noted inadequate support by authorities despite the prevalence of tension in ICUs. In this regard, a female nurse stated:

“Working in the ward (ICU) is quite difficult and exhausting. As you can see, the majority of our patients are the elderly suffering from confusion and mental disorders such as delirium. So, we expect more support from authorities to provide better services for our patients; unfortunately, this is not the case at the time being.”

Moreover, another nurse said:

“I also work in another hospital; of course, in that hospital, I am working in another ward, which cannot be compared with ICU at all. The majority of patients in ICUs are completely out of their senses. They are either suffering from delirium, dementia, or complete unconsciousness. We need supervisors and managers to pay attention to ICU conditions and stop managing this unit like others.”

#### 3.1.3. Categorized Relationships

Some participants discussed the importance of close relationships in reaching a common goal. In this regard, one of the participants stated:

“ICU conditions are different from other wards. The majority of patients in these units are suffering from acute conditions. Sometimes, when a patient has delirium, the nurse needs to devote all her time to that one single patient; so, in my opinion, some of the staff should be allowed to prescribe medications. Sometimes, the patient’s condition worsens only because medications should be prescribed in a classified manner.”

Additionally, in this regard, a male nurse stated:

“As I have been working in ICUs for several years, I am familiar with the procedures, actions, and medicines used under special conditions. When you have some patients who are talking nonsense (delirious), you need to engage with them, which makes them quite exhausted. When the patient’s condition worsens, waiting for the physician’s instructions may waste a lot of time.”

### 3.2. Theme 2: Exhaustive Care Provision

The second main theme, extracted from the nurses’ experiences, is exhaustive care provision, which includes the following subthemes: exhaustion from devotion, occupational fatigue, and fruitless caring.

#### 3.2.1. Exhaustion from Devotion

Nurses’ experiences of care provision for delirious patients in ICUs revealed extreme fatigue, negative mood, and confusion due to heavy workload. In this regard, a female nurse stated:

“Working in ICUs is coupled with much exhaustion. The majority of patients are not much aware of their surroundings. They are either in a coma (or delirious) or have Alzheimer’s disease. So, we work our fingers to the bone without any expectations or even acknowledgment by the patient.”

Another nurse mentioned her negative mood and confusion due to heavy workload:

“I have been working in the ICU for 10 years now, and the hospital managers do not allow me to leave this unit. To be honest, I like it here; I only work to please God and myself. The patients are usually delirious and sometimes utter shocking words; yet again, it does not stop us from treating them right. But as days pass by, we find ourselves exhausted and always stuck at work.”

#### 3.2.2. Occupational Fatigue

Based on the nurses’ experiences of care provision for delirious ICU patients, occupational fatigue was associated

**Table 1.** The Overview of Themes, Subthemes, and Codes Constructed Based on Nurses' Experiences of Care for Delirious Patients in ICUs

Meaning Units	Subthemes	Themes
Inadequate staff communication with patients	Poor relationships	Troubled relationships
Inadequate communication among the staff		
Inadequate staff communication with officials		
Inadequate protection by authorities	Inadequate support	
Inadequate support by partners		
Necessity of following orders for constant communication based on academic degree	Categorized relationships	
Extreme fatigue		
Negative mood		
Confusion due to heavy workload	Exhaustion from devotion	
Long working hours		
Limited number of staff		
Inefficient equipments	Occupational fatigue	Exhaustive care provision
Pointless actions		
Need to cope with stress		
Consequences of violence	Fruitless caring	

with and rooted in long working hours, inadequate number of staff, and inefficient equipments. In this regard, a participant said:

“Even 1 shift in this ward is tiring, let alone 2 shifts. As soon as we complain about something, they say that we are young and that they are short of staff. When you think about it, you find it very difficult. What’s more, our patients are out of their senses. When most of our patients, particularly the older ones, are delirious, we become dramatically exhausted.”

In addition, another participant stated:

“Working in ICUs with delirious and critical patients is full of stress by itself. The conditions deteriorate when the equipments do not function properly and are inefficient.”

### 3.2.3. Fruitless Caring

Some of the participants' experiences included fruitless care for the patients. According to some nurses, when they encounter their patients' death after continuous care provision, they feel as if all their efforts have been fruitless. In this regard, one of the participants said:

“Once we did our best for a 53-year-old woman who had an accident. She started to feel better for a few days, but then, she became delirious and her condition deteriorated. We thought it was due to the blow to her head and believed she would get better soon; unhappily, she passed away after 4 days.”

Regarding the necessity to cope with stress, one of the participants stated:

“I sometimes wonder how I have survived in this ward. On the other hand, it is difficult for me to work in regular wards. Honestly, to stay in this ward, I am willing to tolerate all the stress and listen to the patients' nonsense due to their malfunctioning brain.”

Another participant mentioned the difficulty of coping with delirious patients in ICUs:

“There was a man who was transferred to this ward for a blow to his head. He was ok during the first few days and thanked us for all we did for him. Unexpectedly, he got delirious and started to talk nonsense and behave strangely; it was getting more difficult for us to approach him.”

## 4. Discussion

According to the participants' statements, poor relationships, inadequate support, and categorized relationships were among the main factors damaging the relationship among nurses. In addition, exhaustion from devotion, occupational fatigue, and fruitless caring were among factors, resulting in an exhaustive care provision experience. From the participants' viewpoint, one of the influential factors was poor staff and staff-patient relationship, which might result from inadequate communication

among the staff, as well as inadequate contact among the staff and authorities.

In this regard, Mahmoodi et al. showed that effective relationship among nurses and patients reduces patients' mental tension (19). In addition, Atashzadeh Shooride et al. (2012) noted the necessity of establishing continuous supportive relationships among nurses and patients, as problematic relationships with patients and unawareness of their needs can cause moral tensions in nurses (20). Besides the significance of nurse-patient relationship, as shown in the present study, other studies have also noted the significance of a healthy relationship among the staff, as well as staff and authorities (21, 22). In fact, an effective relationship is the key to patient satisfaction, cooperation, and recovery (23). Appropriate relationships between nurses and physicians also affect the quality of care provided by nurses (24).

Through effective behaviors, managers can empower the staff and improve their occupational satisfaction, sense of commitment, sense of responsibility, efficiency, and quality of services (25). From the participants' viewpoint, inadequate support from authorities and wardmates negatively affected their relationships and influenced the patients and care services. Reduced managerial support causes nurses to feel ignored and fail in their tasks (26). On the other hand, effective management entails direct positive effects on the quality of care provision, occupational satisfaction, and social status (27).

Based on the results of the present study, the necessity of following instructions and categorized relationships (in terms of academic degree) can damage nurses' relationships and care provision for the patients. In line with the present study, Atashzadeh Shooride et al. noted that insufficient nursing authority in ICU leads to tension among nurses and dereliction of duty (20).

In the participants' view, extreme fatigue, negative mood, and confusion due to heavy workload lead to exhaustion in devotion and affection. In a study by Stanley et al., nurses working in ICUs are considerably more depressed, stressed, irritable, sensitive, and ill-tempered in comparison with other nurses, which is due to the tension in these wards (28). Furthermore, ICU nurses are more deprived of social activities due to their full-time job, work pressure, and work shifts (29).

Occupational fatigue, caused by inadequate workforce and inefficient equipments, was another issue experienced by nurses providing care to delirious patients. Previous studies have indicated that factors, such as shortage of workforce, substandard environmental conditions, lack of organizational support, and nurses' dissatisfaction influence the provision of care services by nurses and lead to low-quality services (30). In a study by Wu et al., the

high prevalence of occupational fatigue in nurses was attributed to heavy workload, inadequate workforce, constant exposure to patients and their death, and exhaustive work shifts (31).

Additionally, in a study by Poncet et al., high levels of occupational stress, as an exclusive characteristic of ICUs, were introduced as a risk factor for increased occupational depression (32). Nobahar also mentioned that shortage of equipments, besides broken devices, influences the quality of care services (12). Moreover, in a study by Drisoll et al., shortage of nurses in ICUs exposed patients to greater mortality risks (33).

Other studies in this area have revealed different factors for occupational depression in nurses, which are as follows: stressful events (e.g., patient's death); care provision for patients with complicated needs; insufficient social support; heavy workload; lack of job security; low wages and benefits; decision-making in emergency situations (based on inadequate data) and being held responsible for the outcomes; shortage and unbalanced distribution of workforce; contradictory roles and values; and strict supervisors (34-36). In fact, occupational depression is one of the most common and inevitable consequences of occupational stress (37), which is caused by patients in the first place, as the quality of care services and patient satisfaction reduce due to nurses' occupational fatigue (38).

Finally, nurses' understanding of the fruitless nature of their tasks and the necessity to face stress and aggression in the workplace all cause nurses to believe that their care services are pointless. In a study conducted by Niederman, more than half of patients who died in American hospitals were hospitalized in ICUs and received useless services (39). Based on the results reported by Yekke Fallah et al. regarding ICU nurses' reactions to fruitless services, it was revealed that such services produce negative emotional responses in nurses. To reduce these services and their impacts, nursing managers can employ supportive strategies to decrease ICU nurses' problems, such as occupational fatigue, moral tension, and breakaway from work (40).

The necessity to act according to medical orders and knowledge of useless orders create contradictions in nurses. Nurses expect to provide care services in line with ethical principles, but they need to cope with moral tensions when facing fruitless care services (41). Overall, according to the results of the present study, poor relationships, inadequate support, and categorized relationships are among factors damaging the relationship among nurses, while exhaustion from devotion, occupational fatigue, and fruitless caring are factors, leading to exhaustive care provision.

To conclude, patients can be relieved from disease-

related tensions, especially delirium, through strengthening nurse-patient relationships. The staff's proper and healthy relationships with one another, as well as managerial support, can improve occupational relationships and care services. Overall, nursing is a demanding and difficult job by itself. Therefore, mental exhaustion, shortage of workforce, inefficient equipments, and provision of fruitless care services can all cause occupational fatigue and other physical and mental problems in nurses.

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## Footnotes

**Authors' Contribution:** Parand Pourghane and Maryam Rajabpour Nikfam performed data collection and were responsible for the study conception and design. Parand Pourghane, Maryam Rajabpour Nikfamand, and Abbas Ebadi performed data analysis. Parand Pourghane was responsible for drafting of the manuscript, and Abbas Ebadi made critical revisions to the paper for important intellectual content.

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## References

- Jannati Y, Bagheri Nesami M, Sohrabi M, Yazdani Cheraty J, Mazdarani S. Incidence of delirium and associated factors before open heart surgery [In Persian]. *J Res Dev Nurs Midwifery*. 2013;**10**(1):33-42.
- Urden L, Stacy K, Lough S. *Critical care nursing diagnosis and management*. 6 ed. Newyork: Mosby Elsevier; 2010.
- Guenther U, Weykam J, Andorfer U, Theuerkauf N, Popp J, Ely EW, et al. Implications of objective vs subjective delirium assessment in surgical intensive care patients. *Am J Crit Care*. 2012;**21**(1):e12-20. doi: [10.4037/ajcc2012735](https://doi.org/10.4037/ajcc2012735). [PubMed: [22210705](https://pubmed.ncbi.nlm.nih.gov/22210705/)].
- Ely EW, Margolin R, Francis J, May L, Truman B, Dittus R, et al. Evaluation of delirium in critically ill patients: validation of the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU). *Crit Care Med*. 2001;**29**(7):1370-9. doi: [10.1097/00003246-200107000-00012](https://doi.org/10.1097/00003246-200107000-00012). [PubMed: [11445689](https://pubmed.ncbi.nlm.nih.gov/11445689/)].
- Zolfaghari M, Arbabi M, Razi S, Biat K, Bavi A. Effectiveness of a multi-factor educational intervention on delirium incidence and length of stay in patients with cardiac surgery [In Persian]. *Tehran Nurs Midwifery Univ J Hayat*. 2012;**18**(1):67-78.
- Ouimet S, Kavanagh BP, Gottfried SB, Skrobik Y. Incidence, risk factors and consequences of ICU delirium. *Intensive Care Med*. 2007;**33**(1):66-73. doi: [10.1007/s00134-006-0399-8](https://doi.org/10.1007/s00134-006-0399-8). [PubMed: [17102966](https://pubmed.ncbi.nlm.nih.gov/17102966/)].
- Dadgari A, Yaghmaei F, Shahnazarian J, Dadvar L. A survey of knowledge, attitudes and skills of nurses in the intensive care unit open heart surgery in the prevention of ICU syndrome [In Persian]. *Knowl Health J*. 2009;**2**(3):1-8.
- Neziraj M, Sarac Kart N, Samuelson K. The intensive care delirium screening checklist: translation and reliability testing in a Swedish ICU. *Acta Anaesthesiol Scand*. 2011;**55**(7):819-26. doi: [10.1111/j.1399-6576.2011.02459.x](https://doi.org/10.1111/j.1399-6576.2011.02459.x). [PubMed: [21658011](https://pubmed.ncbi.nlm.nih.gov/21658011/)].
- Sohrabi Y, Jannati M. Delirium and its diagnostic tools: A new approach to nursing practice [In Persian]. *J Clin Exc*. 2013;**1**(2):86-96.
- Zolfaghari M, Bahramnejad F. *Nursing Cares in Intensive Care Units*. 1 ed. Tehran: Boshra & Tohfeh; 2010.
- Devlin JW, Fong JJ, Howard EP, Skrobik Y, McCoy N, Yasuda C, et al. Assessment of delirium in the intensive care unit: nursing practices and perceptions. *Am J Crit Care*. 2008;**17**(6):555-65. quiz 566. [PubMed: [18978240](https://pubmed.ncbi.nlm.nih.gov/18978240/)].
- Nobahar M. Care quality in critical cardiac units from nurses perspective: A content analysis [In Persian]. *J Qual Res Health Sci*. 2014;**3**(2):149-61.
- Sabzevari S, Soltani Arabshahi K, Shekarabi R, Koohpayeh Zadeh J. Nursing Students communication with patients in Hospitala Affiliated to Kerman university of medical sciences [In Persian]. *Iran J Med Educ*. 2006;**6**(1):43-9.
- Ahmadi F, Nobahar M, Alhani F, Falahi Khoshknab M. Perspectives of retired nurses on factors that affected quality of nursing care [In Persian]. *Hayat*. 2011;**17**(1):24-34.
- Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;**15**(9):1277-88. doi: [10.1177/1049732305276687](https://doi.org/10.1177/1049732305276687). [PubMed: [16204405](https://pubmed.ncbi.nlm.nih.gov/16204405/)].
- Pourghane P, Hosseini M, Mohammadi F, Ahmadi F, Tabari R. Patients perception of cardiac rehabilitation after coronary artery bypass graft (CABG): A qualitative study [In Persian]. *J Mazand Univers Med Sci*. 2013;**23**(106):61-76.
- Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*. 2004;**24**(2):105-12. doi: [10.1016/j.nedt.2003.10.001](https://doi.org/10.1016/j.nedt.2003.10.001). [PubMed: [14769454](https://pubmed.ncbi.nlm.nih.gov/14769454/)].
- Strubert Speziale H, Alen J, Carpenter D. *Qualitative research in nursing*. 3rd ed. Philadelphia: Williams & Wilkings; 2003.
- Mahmoudi H, Ebadi A, Salimi S, Najafi Mehri S, Mokhtari Nouri J. Effect of nurse communication with patients on anxiety, depression and stress level of emergency ward patients [In Persian]. *J Intensive Care Nursing*. 2010;**3**(1):7-12.
- Atashzadeh Shoorideh F, Ashktorab T, Yaghmaei F. Response of ICUs nurses to mortal distress: A qualitative study [In Persian]. *Iran J Criti Care Nurs*. 2012;**4**(4):159-68.
- Aiken LH, Clarke SP, Sloane DM, Sochalski JA. An international perspective on hospital nurses' work environments: The case for reform. *Policy Polit Nurs Pract*. 2016;**2**(4):255-63. doi: [10.1177/152715440100200402](https://doi.org/10.1177/152715440100200402).
- Allen J, Mellor D. Work context, personal control, and burnout amongst nurses. *West J Nurs Res*. 2002;**24**(8):905-17. doi: [10.1177/019394502237701](https://doi.org/10.1177/019394502237701). [PubMed: [12469726](https://pubmed.ncbi.nlm.nih.gov/12469726/)].
- Chant S, Jenkinson T, Randle J, Russell G. Communication skills: some problems in nursing education and practice. *J Clin Nurs*. 2002;**11**(1):12-21. doi: [10.1046/j.1365-2702.2002.00553.x](https://doi.org/10.1046/j.1365-2702.2002.00553.x). [PubMed: [11845748](https://pubmed.ncbi.nlm.nih.gov/11845748/)].
- Zander B, Doblér L, Busse R. The introduction of DRG funding and hospital nurses' changing perceptions of their practice environment, quality of care and satisfaction: comparison of cross-sectional surveys over a 10-year period. *Int J Nurs Stud*. 2013;**50**(2):219-29. doi: [10.1016/j.ijnurstu.2012.07.008](https://doi.org/10.1016/j.ijnurstu.2012.07.008). [PubMed: [22846589](https://pubmed.ncbi.nlm.nih.gov/22846589/)].
- Azimian J. Educational needs of nursing managers about quality assurance of nursing care in Qazvin teaching hospitals [In Persian]. *J Qazvin Univ Med Sci*. 2002;**6**(2):75-80.
- Adali E, Priami M. Burnout among nurses in intensive care units, internal medicine wards, and emergency departments in Greek hospitals. *ICUs Nurs Web J*. 2002;**11**:1-19.

27. Van Bogaert P, Kowalski C, Weeks SM, Van Heusden D, Clarke SP. The relationship between nurse practice environment, nurse work characteristics, burnout and job outcome and quality of nursing care: a cross-sectional survey. *Int J Nurs Stud*. 2013;**50**(12):1667-77. doi: [10.1016/j.ijnurstu.2013.05.010](https://doi.org/10.1016/j.ijnurstu.2013.05.010). [PubMed: 23777786].
28. Stanley N, Penhale B, Riordan D, Barbour RS, Holden S. Working on the interface: identifying professional responses to families with mental health and child-care needs. *Health Soc Care Community*. 2003;**11**(3):208-18. doi: [10.1046/j.1365-2524.2003.00428.x](https://doi.org/10.1046/j.1365-2524.2003.00428.x). [PubMed: 12823425].
29. Weinberg A, Creed F. Stress and psychiatric disorder in healthcare professionals and hospital staff. *Lancet*. 2000;**355**(9203):533-7. doi: [10.1016/s0140-6736\(99\)07366-3](https://doi.org/10.1016/s0140-6736(99)07366-3).
30. Soltani M, Hejazi S, Norian A, Zendedel A, Ashkanifar M, editors. Comparing the effect of 8 week aquatic training on the rate of balance on high and low degree MS patient. *6th international congress on physical education and sport sciences*. 2008; Kish.
31. Wu H, Ge CX, Sun W, Wang JN, Wang L. Depressive symptoms and occupational stress among Chinese female nurses: the mediating effects of social support and rational coping. *Res Nurs Health*. 2011;**34**(5):401-7. doi: [10.1002/nur.20449](https://doi.org/10.1002/nur.20449). [PubMed: 21812006].
32. Poncet MC, Toullic P, Papazian L, Kentish-Barnes N, Timsit JF, Pochard F, et al. Burnout syndrome in critical care nursing staff. *Am J Respir Crit Care Med*. 2007;**175**(7):698-704. doi: [10.1164/rccm.200606-806OC](https://doi.org/10.1164/rccm.200606-806OC). [PubMed: 17110646].
33. Driscoll A, Currey J, George M, Davidson PM. Changes in health service delivery for cardiac patients: implications for workforce planning and patient outcomes. *Aust Crit Care*. 2013;**26**(2):55-7. doi: [10.1016/j.aucc.2012.08.001](https://doi.org/10.1016/j.aucc.2012.08.001). [PubMed: 23026243].
34. Anooosheh M, Ahmadi F, Faghihzadeh S, Vaismoradi M. Causes and management of nursing practice errors: a questionnaire survey of hospital nurses in Iran. *Int Nurs Rev*. 2008;**55**(3):288-95. doi: [10.1111/j.1466-7657.2008.00623.x](https://doi.org/10.1111/j.1466-7657.2008.00623.x). [PubMed: 19522944].
35. Saberi S, Sadr S, Ghadyani M, Yazdi S, Bahari F, Shahmoradi H. The relation between job burnout and general health of judges and prosecutors working in courts of Tehran [In Persian]. *Sci J Forensic Med*. 2008;**14**(2):92-8.
36. Talaei A, Mokhber N, Mohammad Nejad M, Samari A. Burnout and its related factors in staff of University hospitals in Mashhad in 2006 [In Persian]. *J Semnan Univ Med Sci*. 2008;**9**(3):237-45.
37. Saheb Azzamani M, Safari M, Farhani H. Assessment amount of job burnout and its relative with social support of nurses in psychiatric hospitals in Tehran city [In Persian]. *Med Sci J Islamic Azad Univ*. 2009;**19**(3):206-11.
38. MacLeod L. Three keys to patient satisfaction: Nursing, nursing, and nursing. *Nurse Lead*. 2012;**10**(5):40-3. doi: [10.1016/j.mnl.2012.03.012](https://doi.org/10.1016/j.mnl.2012.03.012).
39. Niederman MS, Berger JT. The delivery of futile care is harmful to other patients. *Crit Care Med*. 2010;**38**(10 Suppl):S518-22. doi: [10.1097/CCM.0b013e3181f1c3a5](https://doi.org/10.1097/CCM.0b013e3181f1c3a5). [PubMed: 21164391].
40. Yekefallah L, Ashktorab T, Manoochehri H, Alavi Majd H. Intensive care nurses reaction to futile cares: A phenomenological study [In Persian]. *Jame Negar Nurs Midwifery*. 2016;**25**(80):107-17.
41. Scanlon A, Murphy M. Medical futility in the care of non-competent terminally ill patient: nursing perspectives and responsibilities. *Aust Crit Care*. 2014;**27**(2):99-102. doi: [10.1016/j.aucc.2012.10.003](https://doi.org/10.1016/j.aucc.2012.10.003). [PubMed: 23218919].