

Factors affecting the quality of nursing care in intensive care units

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Introduction

Care is the main focus of the nursing profession, and nurses are from the largest group of healthcare providers. They play a fundamental role in the provision and maintenance of health services at various levels [1]. Nurses can have a direct impact on the health status of patients. Therefore, it is essential for them to possess the necessary skills and sufficient insight, especially in critical care units [2].

In intensive care units (ICUs), patients who are critically ill, or on the verge of life and death, are treated [3]. Nursing in critical care units is one of the most advanced specialties in nursing and has been established in various countries for over half a century. Its goal is to provide specialized care using the most advanced facilities for patients whose lives are at risk [1]. In this department, due to factors such as the complexity of patients' conditions and treatment processes, the presence of numerous electronic devices and equipment, patients' lack of consciousness, their dependence on caregivers and life support devices, and the extensive use of oxygen, the likelihood of errors and adverse events is significantly increased, requiring careful attention. Therefore, the development and implementation of standards in the ICU has led to better patient survival, cost savings, a reduction in preventable deaths, and in turn, it improves the quality of patient care [4].

nursing care quality includes patients' access to physical and psychosocial needs fulfillment, and patients' trust to receive comprehensive and multidimensional care. It is evaluated in physical, psychosocial, and communicational dimensions. [5]. The quality of nursing care in the ICU directly impacts patient outcomes, safety, and satisfaction.

Improving the quality of nursing care is often hindered by several challenges which can be attributed to various factors such as inadequate staffing, poor work environments, insufficiently educated nurses, etc [6]. Additionally, identifying and improving the necessary skills and knowledge in these aspects are essential for nurses to address the emotional and physical well-being of patients [1]. This study was conducted to examine these factors affecting the quality of nursing care in the intensive care unit.



Material and Methods

This is a review study, and papers published within the period of 1981-2024 were investigated. To obtain related scientific documents, web surfing was conducted in Persian and English using various keywords, including nursing care, intensive care unit, effective factors on the quality of nursing care. Conducting this search, papers related to this subject were extracted from PubMed, Magiran, Google Scholar, Elsevier, and SID databases.

Results discussion

A review of multiple articles indicate that various factors influence the quality of nursing care in the intensive care unit including nursing competence, knowledge, staffing levels, nurse-patient ratio, emotional Well-Being, effective communication, teamwork, work environment, technological advancements, ethical challenges, cultural competence in care, clinical leadership, adequate rest, which all will be addressed in this study.

1. Nursing competence, training and knowledge

To ensure the continuity and quality of care, nurses must integrate technical skills with scientific knowledge in clinical reasoning and decision-making. For example, they should have knowledge of nursing diagnoses, the point is that using evidence-based practices, identify patients' problems and design, implement, and evaluate care programs to address these issues [1,7]. As Castellan et al. state, the number of most critical nursing diagnoses was a good predictor of both length of stay and mortality, better than the APACHE II score or the medical diagnoses [7].

In addition to this, nurses can improve the quality of their care by understanding the factors affecting the occurrence of complications and adverse events in the ICU. For example, Tonna et al has investigated that several factors in surgical patients such as anesthesia medications, pain, and operative time, and other modifiable factors such as sleep-wake disruption impact on developing delirium. Understanding these factors help nurses improve their care [8].

2. Staffing levels

Among various nursing care units in hospitals, intensive care units (ICUs) require higher levels of nurse staffing to closely monitor severely ill patients and provide quality and safe nursing interventions without delay [9]. Low nurse staffing levels lead to higher hospital mortality rates, and adverse patient outcomes [10,11]. Also, there is a risk that many aspects of care may either be delayed or left undone [12].



Furthermore, National Institute for Health and Care Excellence (NICE) proposed that missed care could be used as a “red flag” to warn of inadequate staffing levels and, as a result, be a potential useful indicator of the quality of nursing services [13].

3. Nurse-Patient Ratio

A study has shown that mortality decreases at lower patient-to-nurse ratios. This appropriate ratio would allow us to demonstrate that adequate nurse staffing can positively impact the outcomes of the care offered to ICU patients and their relatives. However, addition of a patient to the nursing workload increases emotional distress, reduces job satisfaction, and raises mortality [14].

4. Emotional and psychological Well-Being

Results showed that nurses working in ICU undergo more stress compared to the nurses in other wards which can impact the quality of their care [4], as they have various and numerous roles. They have the highest work load and are more involved in interventions and care [5]. Therefore, the effect of work-related stress on them is so high. The results showed that administration of stress management program leads to an increase in nursing care quality scores [5].

In addition to this, the World Health Organisation has defined burnout as “a syndrome” conceptualised as resulting from chronic workplace stress that has not been successfully managed. Burnout syndrome (BOS) is composed of three dimensions: emotional exhaustion (EE), or depletion of physical and emotional resources; depersonalisation (D), which is described as the development of cynical attitudes towards others; and perceived lack of personal accomplishment (PA), which consists of perceiving oneself as negative and incapable of doing the job correctly. Nurses working in special services such as ICU, suffer high levels of burnout and depression [15]. For critical care nurses, the inability to choose days off, rapid patient turnover, the lack of participation in an ICU working group, caring for a dying patient [16], having more working hours by the patients’ bed, exposing to patients’ pain and suffering, administration of interventional procedures such as cardiopulmonary resuscitation [17], participating in or witnessing decisions to forego life-sustaining treatments, extended shift work, sleep disruption, poor working environment, location and quality of the hospital, not having a permanent job, working night shifts, excessive patient load and inadequate pay, all these lead to stressful situations and eventually to burnout [16,18,19,20]. Moss, as cited by Cimiotti et al., states that BOS results in decreased effectiveness and poor work performance, provoking losses to the profession through dismissal or voluntary abandonment, reduced quality of care, lower patient satisfaction, increased number of medical errors, higher rates of health-care associated infections, and higher 30-day mortality rates [21,22].



The mentioned factors such as night shifts, work overload, work environment, stress, burnout, the longer their working hours, the more irregular their shifts, fatigue, etc, influence the development of job dissatisfaction [23]. This situation has increased the workload on nurses, whose own health suffers, provoking knock-on effects on the quality of care provided. Therefore, organisational strategies to prevent burnout and increase nurses' job satisfaction could improve the quality of patient care [17].

5. teamwork

Nowadays, great emphasize was directed toward improving collaboration among health care professionals in an attempt to improve quality of patient care as well as decreasing medical errors [24], provide safe, competent nursing practice, and achieve quality patient outcomes [25]. Collaborative practice has been found to be of great importance especially among intensive care nurses, because the ICU work is complex and intense so, nurses should be prepared to deliver care to patients with important homodynamic alterations at any time, which demand specific knowledge, great skills to make decisions, and the interactions of various health care providers [25]. Generally, increasing collaboration among nurses is critical in effective therapeutic environment for patients [26].

Moreover, Care Bundles are considered as valuable and proven to affect care quality. Care bundle refers to a set of standardized, evidence-based interventions and actions that are implemented in a coordinated manner for patients to improve treatments outcomes. These actions are commonly used in intensive care units or to prevent hospital-acquired infections. Each care bundle consists of several components that must be carried out simultaneously and completely, as their combined effect is more significant than implementing each component separately. In a study conducted by Wu et al, care bundle has been investigated for the prevention of unplanned endotracheal extubation in intensive care unit, and has been observed this approach leads to reduce errors and improve the quality of care [27].

6. Effective communication

Patient satisfaction is a sign of the quality of nursing services and patient care. Satisfaction, to a great extent, is formed with patient-nurse relationship. patients in ICUs can feel lonely and isolated as they cannot receive the family support they need when they want so nurses should have a good communication with their patients. In the other words, meeting the needs and physical, emotional expectations of fully-dependent intensive care unit patients is of great importance in the treatment process and impacts on the quality of nursing care which is often achieved through suitable interaction with the patient [28,29].

On the other hand, problems with the quality of working relationships are common risk factors for burnout syndrome, including conflicts and poor working relationships with colleagues [18]. Errors in

communication is a contributing factor in adverse patient events in healthcare systems. The systemic nature of this problem of miscommunication between healthcare providers indicates a need for a corresponding change in the system design of communication. Use of the SBAR (Situation, Background, Assessment, Recommendation) tool has been shown to improve communication between healthcare providers, leading to quantifiable, and positive gains in patient safety. It is a simple and effective method for bringing about systemic change in healthcare communication. Use of the SBAR tool, therefore, should be implemented on a systematic and pervasive basis in order to begin the process of healing healthcare communication and creating a safer healthcare environment for people who seek care [30].

7. Work environment

Poor work environments have an impact on nurses' capacity to provide nursing care [31]. The WHO emphasizes that fair wages and decent working conditions are essential not only for attracting and retaining professionals but also for acknowledging their invaluable contributions to society. The International Council of Nurses (ICN) outlines five strategic priority areas for creating decent jobs for nurses: (1) investment in education and nurses through funding for nursing education and job creation; (2) valuing the work of nurses, including fair remuneration, recognition of their role, decent working conditions, and focus on nurses' well-being; (3) gender equality in care work by reducing gender disparities and creating more equitable opportunities; (4) improving working conditions, which includes work-life balance, safe practice environments, and opportunities for professional development; and (5) collaborative work between the health sector and other sectors such as the economy, education, transport, and infrastructure to maximize the economic benefits of investing in nursing. Implementing these strategies can result in improved health outcomes, greater professional satisfaction, a positive impact on global public health, high-quality patient care and improved patient outcomes [32].

A lack of nurse staffing leads to rationing of nursing care which refers to the limitation or allocation of nursing care due to a lack of resources such as staff, time, equipment, or financial resources, so nurses are unable to provide all the necessary care to patients. Also, rationing of nursing care leads to poorer patient outcomes, adverse events, such as some of the most common events, including treatment errors, falls, infections, pressure sores, and critical incidents [3]. Adequate nurse staffing is the key factor in providing high quality care and achieving better nurse job outcomes [9].

In addition, unfinished nursing care arises from contexts in which nurses do not have enough time or resources to provide all planned patient care. So care is delayed, partially or completely omitted in contexts of time and/or resource scarcity. According to some investigations, due to better ICU work environments, omitted nursing care was rare in the ICU for most nursing care [31]. Limiting the occurrence of omissions

of care could potentially increase patient satisfaction and decrease the frequency of negative adverse events [33].

8. Technological advancements

Health information technology includes various technologies: electronic sign-out and hand-off tools, smart pumps, bar-code medication administration, retained surgical items detectors, patient portals, telemedicine and electronic incident reporting. Health information technology presents numerous opportunities for improving and transforming healthcare which includes; reducing human errors, improving clinical outcomes, facilitating care coordination, improving practice efficiencies, tracking data over time, and improving patient safety. However, regular training and streamlined workflows are essential for maximizing the benefits of ICU technology [34].

9. Ethical challenges

Healthcare institutions should consider the range of ethical problems that nurses encounter in their work and how it impacts their level of stress and their ability to do good for their patients. For example, critical care nurses often face suffering head-on, and might question the balance between the value of attempts to preserve a patient's life and aggressive physiological measures that appear to prolong anguish and yield no fruitful outcome. These issues or problems are stressful and influence the well-being of nurses and the health of patients [35].

Türkan Işık et al. suggest addressing or eliminating these challenges by Courses which should be emphasized during nursing education, or vocational trainings should be organized that address ethical problems specific to intensive care and opportunities should be provided to nurses to share their experiences with ethical problems. In-service trainings should be organized in order to raise awareness of legal regulations and ethical codes [36].

10. Cultural competence in care

Kirmayer, as cited by Betancourt, states that cultural competence has been defined as the ability of systems to provide care to patients with diverse values, beliefs and behaviors, including tailoring delivery to meet patients' social, cultural, and linguistic needs [37]. The key to cultural competence is patient centeredness built on respect, sensitivity, composure, partnership, honesty, astuteness, curiosity, and tolerance [38].

Culturally competent care is a key cornerstone in efforts to eliminate racial/ethnic disparities in health and health care. In fact, quality improvement of our health care system in these critical areas will improve care, the skills of clinicians, and health care services. Nurses who possess cultural competence are better



equipped to understand and address the diverse needs of patients from different cultural backgrounds. This competency enhances communication, builds trust, and improves patient satisfaction, leading to more effective care [39].

11. Clinical leadership and management style

Leadership style not only affects patients but also the well-being of nurses. According to some investigations, there is a clear relationship between relational leadership styles and lower patient mortality, reduced medication errors, restraint use, hospital-acquired infections, improving patient satisfaction and patient safety outcomes [40]. Additionally, in another study it has been stated that Positive and supportive leadership styles can improve nurses' job satisfaction, organisational commitment, and intent to stay in their position while simultaneously reducing emotional exhaustion [41].

12. Adequate rest and work schedules

Fatigue in nurses' work may implicate consequences like avoiding contact with patients, a negative self-assessment of performance, and a host of other responses that may adversely impact on personal and professional well-being and functioning [3]. Also, fatigue can jeopardize patient care. There is an association between increased nursing workload and patient-focused outcomes, including increased mortality and adverse event in the intensive care setting [42]. Generally, work schedules that include overtime and more workdays can result in fatigue that should be closely monitored [43].

Conclusions

Quality nursing care in the ICU depends on various factors, from adequate staffing and advanced training to emotional support and effective teamwork. Addressing these areas requires a collaborative approach from healthcare organizations, policymakers, and nursing leaders to foster apposite working environment for ICU nurses. Additionally, by investing in these key factors, ICUs can consistently deliver safer, more effective, and compassionate care, benefiting both patients and healthcare providers.

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