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Abstract--Critical care nursing plays a pivotal role in the healthcare system, providing specialized care to acutely ill patients who require intensive monitoring and treatment. Within the dynamic and high-stakes environment of critical care units, nurses serve as frontline caregivers, delivering comprehensive care, advocating for patients, and coordinating interdisciplinary interventions. The field of critical care nursing encompasses a diverse range of specialties, including intensive care, emergency care, trauma care, and post-anesthesia care, among others. The unique challenges inherent in critical care nursing demand specialized skills, clinical expertise, and a deep understanding of complex physiological processes. Critical care nurses must possess a keen ability to assess and manage patients with rapidly changing conditions, often in life-threatening situations.

Keywords---critical care nursing, patients, emergency care, trauma care, post-anesthesia.

Introduction

Critical care nursing plays a pivotal role in the healthcare system, providing specialized care to acutely ill patients who require intensive monitoring and treatment. Within the dynamic and high-stakes environment of critical care units, nurses serve as frontline caregivers, delivering comprehensive care, advocating for patients, and coordinating interdisciplinary interventions. The field of critical care nursing encompasses a diverse range of specialties, including intensive care, emergency care, trauma care, and post-anesthesia care, among others. (6)

The unique challenges inherent in critical care nursing demand specialized skills, clinical expertise, and a deep understanding of complex physiological processes. Critical care nurses must possess a keen ability to assess and manage patients with rapidly changing conditions, often in life-threatening situations. Their roles extend beyond traditional bedside care to encompass advanced interventions such as mechanical ventilation, hemodynamic monitoring, and administration of potent medications.(3)

critical care nursing operates within a multidisciplinary framework, requiring close collaboration with physicians, respiratory therapists, pharmacists, and other allied healthcare professionals. Effective communication and teamwork are essential in ensuring seamless coordination of care and optimizing patient outcomes in this demanding setting. This introduction sets the stage for exploring

the multifaceted nature of critical care nursing, highlighting its importance in providing high-quality, specialized care to critically ill patients while emphasizing the interdisciplinary collaboration and advanced skills required of practitioners in this field.(1)

The Impact of Nursing Interventions on Patient Outcomes in the Critical Care Setting

Nursing interventions play a pivotal role in shaping patient outcomes within the critical care setting, where patients often face life-threatening conditions requiring intensive monitoring and treatment. The impact of nursing interventions extends far beyond the immediate bedside care, influencing the trajectory of recovery, quality of life, and even mortality rates. These interventions encompass a wide array of activities, including but not limited to assessment, medication administration, wound care, patient education, emotional support, and collaboration with the interdisciplinary healthcare team.(2)

First and foremost, nursing interventions in critical care involve meticulous assessment and monitoring of patients' vital signs, neurological status, respiratory function, and other key parameters. Through vigilant observation and prompt recognition of changes in patient condition, nurses can swiftly initiate appropriate interventions, such as adjusting medication dosages, administering emergency treatments, or alerting physicians to critical changes. This proactive approach is essential for preventing complications, optimizing treatment efficacy, and improving overall patient outcomes.(5)

Medication administration is another crucial aspect of nursing interventions in critical care, where patients often require complex pharmacological regimens to manage their conditions. Nurses must possess a thorough understanding of medication interactions, dosages, and potential side effects to ensure safe and effective administration. Additionally, they play a vital role in patient education, providing instructions on medication schedules, proper administration techniques, and potential adverse reactions to watch for at home. By empowering patients with knowledge and self-management skills, nurses contribute to improved medication adherence and long-term treatment success.(7)

Wound care is a fundamental nursing intervention in critical care, particularly for patients recovering from surgery, trauma, or severe illness. Nurses are responsible for assessing and dressing wounds, preventing infection, promoting healing, and monitoring for complications such as dehiscence or necrosis. Through meticulous wound care practices and adherence to evidence-based guidelines, nurses help mitigate the risk of complications, expedite healing, and enhance the overall surgical or traumatic recovery process.(3)

Nursing interventions in critical care extend beyond the physical realm to encompass emotional support and psychosocial care. Patients and their families often experience fear, anxiety, and uncertainty during critical illness, and nurses serve as compassionate advocates and sources of comfort throughout the healthcare journey. By providing emotional support, actively listening to patients' concerns, and facilitating communication with other members of the healthcare

team, nurses foster a therapeutic environment conducive to healing and recovery.(6)

Furthermore, effective collaboration among interdisciplinary healthcare team members is essential for optimizing patient outcomes in the critical care setting. Nurses work closely with physicians, respiratory therapists, physical therapists, nutritionists, and other specialists to develop comprehensive care plans tailored to each patient's unique needs. Through interdisciplinary collaboration, nurses contribute valuable insights, coordinate care transitions, and ensure continuity of care across different healthcare settings, ultimately enhancing patient outcomes and promoting a seamless healthcare experience.(1)

Nurse-Patient Ratios and its Influence on Quality of Care in Critical Care Units

In conclusion, nursing interventions have a profound impact on patient outcomes in the critical care setting, encompassing assessment, medication administration, wound care, emotional support, patient education, and interdisciplinary collaboration. By delivering evidence-based, holistic care, nurses play a central role in promoting recovery, preventing complications, and optimizing the quality of life for critically ill patients. Their dedication, expertise, and compassionate approach contribute to the overall success of patient care in the dynamic and challenging environment of critical care.(

3)

Nurse-patient ratios have emerged as a critical factor influencing the quality of care in critical care units, where patients often require intensive monitoring, complex interventions, and specialized nursing expertise. The ratio of nurses to patients directly impacts various aspects of patient care, including safety, outcomes, satisfaction, and nurse workload. Achieving an optimal balance in nurse staffing is essential for delivering high-quality, patient-centered care and mitigating the risk of adverse events in the dynamic and fast-paced environment of critical care.(11)

One of the primary influences of nurse-patient ratios on quality of care in critical care units is patient safety. Adequate staffing levels enable nurses to provide vigilant surveillance, timely interventions, and close monitoring of patients' condition, reducing the likelihood of medical errors, complications, and adverse events. With fewer patients to care for, nurses can devote more attention to each individual, promptly recognizing changes in status, responding to emergencies, and implementing preventive measures to ensure a safe care environment. Conversely, high nurse-patient ratios may strain resources, leading to gaps in surveillance, delayed responses to patient needs, and increased risk of adverse outcomes, including medication errors, falls, and hospital-acquired infections.(12)

Nurse-patient ratios significantly impact the quality of nursing care delivery in critical care units. Lower ratios allow nurses to allocate more time and resources to each patient, facilitating comprehensive assessments, thorough documentation, and individualized care planning. Nurses can engage in meaningful therapeutic interactions, address patients' physical and psychosocial needs, and provide education and support to promote recovery and well-being. In

contrast, high nurse-patient ratios may compromise the quality of care, resulting in rushed assessments, fragmented care delivery, and limited opportunities for patient engagement. This can undermine the effectiveness of interventions, diminish patient satisfaction, and impede the achievement of optimal outcomes.(6)

Nurse-patient ratios influence nurse workload and job satisfaction, which in turn impact the overall quality of care in critical care units. Excessive workloads resulting from high nurse-patient ratios can lead to burnout, fatigue, and stress among nurses, compromising their ability to deliver safe, effective care. Overburdened nurses may experience difficulty prioritizing tasks, maintaining attention to detail, and communicating effectively with patients and colleagues. As a result, job satisfaction may decline, contributing to higher rates of turnover, absenteeism, and dissatisfaction within the nursing workforce. In contrast, appropriate staffing levels that align with patient acuity and complexity can enhance nurse satisfaction, morale, and retention, fostering a positive work environment conducive to high-quality care delivery.(7)

Nurse-patient ratios play a critical role in shaping the quality of care provided in critical care units, influencing patient safety, nursing care delivery, and nurse workload and satisfaction. Achieving optimal staffing levels requires careful consideration of patient acuity, workload demands, and resource availability to ensure that nurses can effectively meet the complex needs of critically ill patients. By advocating for evidence-based staffing standards and investing in strategies to optimize nurse staffing, healthcare organizations can enhance the quality, safety, and outcomes of care in the challenging and high-stakes environment of critical care.(3)

The Role of Advanced Practice Nurses in Critical Care

Advanced Practice Nurses (APNs) play a multifaceted and indispensable role in critical care settings, contributing to the delivery of high-quality, patient-centered care to individuals facing life-threatening conditions or complex medical needs. With specialized education, advanced training, and clinical expertise, APNs bring a unique skill set to the critical care team, encompassing assessment, diagnosis, treatment, education, and coordination of care. Their role extends beyond traditional nursing responsibilities, encompassing elements of advanced practice and leadership as they collaborate with interdisciplinary teams to optimize patient outcomes and enhance the quality of care delivery.(5)

One of the primary responsibilities of APNs in critical care is advanced assessment and diagnostic evaluation of patients with complex medical conditions. Drawing upon their advanced knowledge and clinical experience, APNs perform comprehensive physical assessments, interpret diagnostic tests and imaging studies, and synthesize data to formulate accurate diagnoses and treatment plans. Their advanced assessment skills enable early recognition of subtle changes in patient status, facilitating prompt interventions and preventing potential complications. By conducting thorough assessments and employing critical thinking skills, APNs contribute to the early detection and management of

deteriorating patients, thereby improving clinical outcomes and reducing mortality rates in critical care settings.(10)

In addition to assessment and diagnosis, APNs in critical care are integral to the implementation and management of advanced therapeutic interventions. They prescribe medications, order diagnostic tests, perform invasive procedures, and coordinate interdisciplinary care to address the complex needs of critically ill patients. APNs possess prescriptive authority, allowing them to initiate and adjust pharmacological therapies based on patients' evolving clinical status and response to treatment. Furthermore, they collaborate closely with physicians, pharmacists, respiratory therapists, and other healthcare providers to develop individualized care plans tailored to each patient's unique needs, ensuring continuity of care and optimizing treatment outcomes.(9)

APNs play a pivotal role in patient and family education, providing valuable information, guidance, and support throughout the critical care journey. They offer explanations about diagnoses, treatment options, and prognoses, helping patients and their families make informed decisions about care preferences and goals. APNs also facilitate communication between patients, families, and the healthcare team, serving as advocates for patients' rights, preferences, and concerns. By empowering patients and families with knowledge and resources, APNs promote active participation in care decisions, enhance understanding of treatment plans, and facilitate smoother transitions between care settings, ultimately improving patient satisfaction and outcomes.(12)

APNs contribute to the advancement of critical care practice through evidence-based research, quality improvement initiatives, and professional leadership. They engage in ongoing education, pursue certifications, and participate in interdisciplinary collaborations to stay abreast of emerging trends, best practices, and innovations in critical care. Additionally, APNs serve as mentors, preceptors, and role models for nursing staff, students, and novice practitioners, sharing their expertise and fostering a culture of continuous learning and professional development within the critical care environment. By advocating for quality improvement initiatives, participating in research endeavors, and assuming leadership roles, APNs drive innovation, promote excellence in care delivery, and advance the science and art of critical care nursing.(8)

Advanced Practice Nurses play a vital and multifaceted role in critical care settings, contributing to the delivery of high-quality, patient-centered care through advanced assessment, diagnosis, treatment, education, and leadership. With their specialized knowledge, clinical expertise, and collaborative approach, APNs enhance patient outcomes, optimize care delivery, and advance the practice of critical care nursing. As integral members of the interdisciplinary healthcare team, APNs embody the essence of advanced practice nursing, advocating for excellence, innovation, and compassionate care in the dynamic and challenging environment of critical care.(3)

Strategies to Reduce Nursing Burnout in Critical Care Environments

Nursing burnout is a significant concern in critical care environments, where nurses face high levels of stress, emotional intensity, and workload demands. Addressing and mitigating burnout is essential not only for the well-being of nurses but also for ensuring high-quality patient care and reducing turnover rates. Several strategies can be implemented to reduce nursing burnout in critical care settings, promoting resilience, job satisfaction, and overall staff morale.(7) One effective strategy to combat nursing burnout in critical care is to prioritize workload management and staffing optimization. Adequate staffing levels ensure that nurses have manageable patient assignments, reducing the risk of burnout associated with excessive workloads and fatigue. Healthcare organizations can implement staffing algorithms based on patient acuity, unit census, and nurse-patient ratios to ensure appropriate staffing levels at all times. Additionally, fostering a culture of teamwork and collaboration enables nurses to support one another, share responsibilities, and collaborate on patient care tasks, alleviating individual burdens and promoting a sense of camaraderie within the team.(11)

Providing opportunities for professional development and education can help prevent burnout by empowering nurses to enhance their skills, pursue career advancement, and stay engaged in their practice. Continuing education programs, certification opportunities, and skill-building workshops enable nurses to expand their knowledge base, develop new competencies, and explore areas of interest within critical care nursing. Additionally, encouraging participation in interdisciplinary collaborations, research projects, and quality improvement initiatives fosters a sense of professional growth and accomplishment, renewing nurses' sense of purpose and passion for their work.(4)

Another critical aspect of reducing nursing burnout in critical care is fostering a supportive work environment that prioritizes employee well-being and work-life balance. Implementing flexible scheduling options, such as self-scheduling or rotating shifts, allows nurses to accommodate personal obligations, manage fatigue, and maintain a healthy work-life balance. Additionally, providing access to wellness resources, such as counseling services, mindfulness programs, and stress management workshops, equips nurses with coping strategies to navigate the challenges of critical care practice effectively. Moreover, promoting open communication, soliciting feedback, and addressing concerns proactively create a culture of trust and transparency, where nurses feel valued, heard, and supported in their roles.(6)

Recognizing and addressing the emotional toll of critical care nursing is essential for preventing burnout and promoting resilience among nurses. Offering regular debriefing sessions, peer support groups, and access to counseling services enables nurses to process challenging experiences, express emotions, and seek assistance when needed. Additionally, implementing strategies to enhance emotional self-care, such as mindfulness practices, relaxation techniques, and resilience training, equips nurses with tools to manage stress, maintain perspective, and cultivate emotional well-being in the face of adversity.

Reducing nursing burnout in critical care environments requires a multifaceted approach that addresses workload management, professional development, work-life balance, and emotional support. By implementing strategies to optimize staffing, foster a supportive work environment, promote professional growth, and enhance emotional resilience, healthcare organizations can mitigate the risk of burnout and create a culture of well-being and sustainability for nurses in critical care settings. Prioritizing the mental, emotional, and physical health of nurses not only enhances staff satisfaction and retention but also ensures the delivery of high-quality, compassionate care to critically ill patients.(4)

The Challenges and Best Practices in Family-Centered Care in Critical Care Units

Family-centered care in critical care units presents both challenges and opportunities for healthcare providers, as they strive to meet the complex needs of critically ill patients while simultaneously supporting and involving their families in the care process. While family involvement is essential for promoting patient well-being, communication, and decision-making, it also presents logistical, emotional, and ethical challenges that must be addressed to ensure the provision of high-quality, patient-centered care.(6)

One of the primary challenges in family-centered care in critical care units is balancing the need for family involvement with the demands of patient care and unit workflow. Critical care environments are often fast-paced, high-stress settings where nurses and physicians must prioritize immediate patient needs and interventions. Integrating families into the care process while maintaining efficiency and safety requires clear communication, collaboration, and coordination among healthcare providers. Furthermore, accommodating family presence at the bedside may pose logistical challenges related to space constraints, infection control measures, and visiting policies, particularly in the context of the COVID-19 pandemic.(5)

Another challenge in family-centered care is addressing the emotional needs and expectations of families while navigating complex medical decisions and uncertainties. Critical illness can be emotionally distressing for patients and their families, who may experience fear, anxiety, grief, and uncertainty about the prognosis and treatment options. Healthcare providers must provide empathetic support, compassionate communication, and opportunities for families to ask questions, express concerns, and participate in care decisions. However, balancing transparency and honesty with sensitivity and hopefulness can be challenging, particularly when discussing prognosis, end-of-life care, or unexpected complications.(6)

Cultural, linguistic, and socioeconomic factors can influence family dynamics, communication preferences, and healthcare decision-making in critical care settings, presenting additional challenges for healthcare providers. Recognizing and respecting cultural diversity, language barriers, and socioeconomic disparities is essential for delivering culturally competent care and promoting trust and collaboration with families. Healthcare providers must employ strategies such as interpreters, cultural liaisons, and patient advocates to bridge

communication gaps, facilitate understanding, and ensure equitable access to care for all patients and families.(10)

Despite these challenges, several best practices can enhance the delivery of family-centered care in critical care units and promote positive outcomes for patients and their families. Effective communication is paramount, with healthcare providers adopting a patient- and family-centered approach that involves active listening, empathy, and collaboration. Regular family meetings, bedside rounds, and interdisciplinary conferences provide opportunities for open dialogue, shared decision-making, and clarification of treatment goals and preferences.(11)

Providing comprehensive education and support to families empowers them to participate actively in the care process, understand their loved one's condition, and make informed decisions about treatment options and goals of care. Healthcare providers can offer written materials, educational resources, and access to support groups to help families navigate the complexities of critical illness and recovery. Moreover, facilitating family presence at the bedside, especially during significant moments such as procedures, rounds, and care transitions, fosters a sense of inclusion, reassurance, and connection between patients, families, and healthcare providers.(11)

Involving families in care planning and discharge planning promotes continuity of care, patient safety, and successful transitions to home or rehabilitation settings. Engaging families as partners in the care team encourages collaboration, enhances communication, and improves adherence to care plans, ultimately leading to better patient outcomes and satisfaction. By embracing family-centered care principles and implementing best practices, healthcare providers can navigate the challenges of critical care environments while promoting a culture of compassion, respect, and collaboration that supports the holistic needs of patients and their families.(4)

Conclusion

In conclusion, critical care nursing stands as a cornerstone of healthcare delivery, encompassing a dynamic and demanding specialty that requires specialized knowledge, advanced skills, and unwavering dedication. Critical care nurses play a pivotal role in the care of acutely ill patients, providing expert assessment, vigilant monitoring, and complex interventions in high-stakes environments where every decision can have life-altering consequences. Their ability to remain calm under pressure, adapt to rapidly changing situations, and collaborate effectively with interdisciplinary teams is essential for optimizing patient outcomes and promoting recovery.(9)

Critical care nursing is characterized by its holistic approach, addressing not only the physical needs of patients but also their emotional, psychological, and spiritual well-being. Nurses in critical care units serve as advocates, educators, and sources of support for patients and their families, navigating the complexities of critical illness with empathy, compassion, and expertise. They foster therapeutic relationships, facilitate communication, and empower patients and

families to participate actively in the care process, promoting shared decision-making and patient-centered care delivery.(8)

Critical care nursing is characterized by its commitment to excellence, evidenced by ongoing education, professional development, and adherence to evidence-based practice guidelines. Nurses in critical care settings engage in continuous learning, pursue advanced certifications, and participate in interdisciplinary collaborations to stay abreast of emerging trends, innovations, and best practices in critical care nursing. Their dedication to excellence drives quality improvement initiatives, advances the science of critical care, and ensures the delivery of safe, effective, and compassionate care to patients facing life-threatening conditions.(8)

In essence, critical care nursing embodies the art and science of nursing at its highest level, demanding resilience, expertise, and compassion in equal measure. As frontline providers in the battle against critical illness, critical care nurses exemplify the core values of nursing—caring, advocacy, integrity, and excellence—while making a profound impact on the lives of patients and families during some of their most vulnerable moments. Through their skillful interventions, unwavering dedication, and profound commitment to human dignity, critical care nurses stand as true heroes of healthcare, embodying the essence of compassion and healing in the face of adversity.(12)

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