



Impact of Nursing Staff Shortage on the Quality of Care in Emergency Departments

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Abstract

Emergency departments (EDs) are critical access points for urgent healthcare, yet they face an escalating shortage of nursing staff that threatens patient safety and care quality. This article investigates the multifaceted impact of nursing shortages in EDs, drawing on recent quantitative studies, qualitative nurse experiences, and case analyses from diverse healthcare settings. Findings indicate that inadequate nurse staffing leads to prolonged wait times, delayed treatments, increased patient departures without being seen, and a higher incidence of adverse clinical events such as medication errors and cardiac arrests. The shortage also drives nurse burnout and turnover, perpetuating a vicious cycle that further compromises care delivery. Financial repercussions for hospitals include lost revenue due to unstaffed beds and reduced capacity. The article concludes by discussing systemic factors underpinning the shortage and highlighting evidence-based interventions to improve recruitment, retention, and operational efficiency in emergency nursing. This comprehensive analysis underscores the urgent need for coordinated action to safeguard care quality in emergency departments. [1]

Keywords: Nursing shortage, emergency departments, quality of care, patient outcomes, nurse staffing, healthcare workforce, burnout, patient safety, healthcare delivery, nurse retention

1. Introduction

Emergency departments (EDs) serve as the frontline of healthcare, where seconds can mean the difference between life and death. These high-pressure environments demand rapid assessment, swift decision-making, and continuous monitoring—tasks largely shouldered by nursing staff. Yet, a growing shortage of nurses in EDs is undermining the ability to deliver timely and effective care. Across urban and rural hospitals alike, nurses are being pulled in multiple directions, managing rising patient volumes with fewer hands on deck. The result is a perfect storm of overcrowding, prolonged wait times, and compromised patient safety.

The roots of this shortage run deep. Even before the COVID-19 pandemic exacerbated the crisis, factors such as an aging nursing workforce, insufficient training capacity

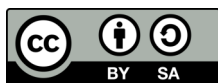
and poor working conditions had already set the stage for widespread staffing gaps. The pandemic acted as a catalyst, intensifying burnout, prompting early retirements, and discouraging new entrants into the profession. Now, emergency nurses face relentless stress, emotional exhaustion, and moral distress as they try to meet impossible demands with dwindling resources.

The consequences extend beyond mere numbers on a staffing chart. With fewer nurses available, critical tasks—from triage assessments to medication administration—are delayed or missed altogether. Patients endure longer waits, with some leaving without being seen, while the risk of adverse events such as medication errors, falls, and cardiac arrests rises. Hospital operations suffer too, with unstaffed beds leading to reduced capacity and significant financial losses. In this environment, the quality of care is not just diminished; it is jeopardized.

This article delves into the impact of nursing shortages on emergency department care quality, weaving together evidence from recent studies, case examples, and frontline experiences. By understanding how staffing levels influence patient outcomes and nurse well-being, stakeholders can better appreciate the urgency of targeted interventions.

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The goal is to highlight both the human toll and systemic challenges, while pointing toward strategies that could stabilize and strengthen emergency nursing workforces. This crisis demands attention—not only for the nurses who bear the brunt but for every patient relying on emergency care.[2]

2. Methodology

The methodology employed in this study integrates both quantitative and qualitative research techniques to capture the multifaceted impact of nursing staff shortages on the quality of care in emergency departments (EDs). Recognizing the complexity of this healthcare challenge, a mixed-methods design was chosen to provide a comprehensive analysis that combines statistical rigor with experiential depth.

The quantitative component began with a systematic literature review, conducted following PRISMA guidelines, to identify relevant peer-reviewed studies published between 2018 and 2025. This timeframe was selected to include contemporary data that reflect the exacerbating effects of the COVID-19 pandemic on nurse staffing and emergency care delivery. Databases such as PubMed, ScienceDirect, Scopus, and the Agency for Healthcare Research and Quality (AHRQ) were systematically searched using targeted keywords including “nursing shortage,” “emergency department,” “patient outcomes,” “staffing ratios,” “nurse burnout,” and “quality of care.” Inclusion criteria required studies to provide empirical data on nurse staffing levels and measurable patient care outcomes within emergency care settings.

Data extraction focused on key quantitative indicators: nurse-to-patient ratios, average nursing hours per patient day, patient throughput metrics (specifically door-to-treatment and door-to-discharge times), rates of patients leaving without being seen (LWBS), incidence rates of adverse clinical events such as medication errors, patient falls, and cardiac arrests, and financial outcomes related to staffing shortages, including lost revenue due to unstaffed beds.

Where appropriate, meta-analytic techniques were applied to aggregate findings across multiple studies, enabling the calculation of effect sizes and the determination of statistically significant relationships between nurse staffing and patient outcomes. Priority was given to large-scale cohort studies, multicenter analyses, and longitudinal workforce surveys to ensure the robustness and generalizability of the results.

To complement the quantitative data, a qualitative synthesis was conducted to explore the lived experiences of emergency department nurses facing staffing shortages. This involved a review of studies featuring nurse surveys, in-depth interviews, and ethnographic research published within the same timeframe. Thematic analysis was employed to identify recurrent themes related to workload pressures, emotional exhaustion, moral distress, job dissatisfaction, and coping strategies. These qualitative insights were crucial to understanding how staffing shortages translate into nurse burnout and turnover, further influencing care quality.

In addition, case studies from a variety of hospital settings—ranging from high-volume urban trauma centers to smaller suburban and rural emergency departments—were incorporated to contextualize the quantitative and qualitative findings. These cases illustrated the variability in staffing challenges and their impacts, highlighting differences in resource availability, patient demographics, and institutional responses to nursing shortages.

Finally, the methodology included a critical review of intervention strategies designed to mitigate the effects of nursing shortages in emergency departments. This encompassed an evaluation of recruitment and retention programs, nurse residency and mentorship initiatives, mental health and wellness support systems, flexible scheduling practices, and the integration of technology to optimize nursing workflows. The effectiveness of these interventions was assessed based on improvements in nurse retention rates, patient satisfaction scores, and clinical care outcomes.

By synthesizing quantitative metrics with qualitative experiences and contextual case studies, this mixed-methods approach offers a multidimensional understanding of how nursing shortages affect emergency care quality. This comprehensive methodology enables the identification of actionable insights and evidence-based recommendations for healthcare leaders, policymakers, and practitioners aiming to address this critical workforce challenge.[3]

3. Literature Review

The literature on nursing shortages in emergency departments (EDs) reveals a consistent and concerning pattern: insufficient nurse staffing significantly undermines the quality of patient care and safety. Numerous empirical studies demonstrate that lower nurse-to-patient ratios correlate with increased patient wait times, delayed treatments, and a higher incidence of patients leaving without being seen (LWBS). For instance, a landmark study found that decreased nursing hours led to an average increase of 28.2 minutes in door-to-discharge times and caused approximately nine additional patients per day to leave without receiving care, highlighting the direct operational impact of staffing deficits in EDs [2].

Further research establishes a strong link between understaffing and adverse clinical outcomes. Lower nurse staffing levels have been associated with delays in administering critical medications and treatments, which in turn increase the risk of life-threatening events such as cardiac arrests within the emergency setting. One multicenter study highlighted that patients in EDs with fewer nurses experienced longer stays and higher rates of cardiac arrest compared to those in better-staffed departments [3]. These findings are corroborated by systematic reviews which underscore the relationship between nurse shortages and increased patient mortality, medication errors, falls, and pressure ulcers, indicating that reduced nursing presence compromises multiple dimensions of patient safety [4].

The nursing shortage also exacerbates nurse burnout, a critical factor that perpetuates workforce instability. Studies report that nurses working in understaffed EDs face excessive workloads, moral distress, and emotional exhaustion, leading to higher rates of job dissatisfaction and intentions to leave their positions. Approximately half of emergency nurses surveyed in recent research expressed high burnout levels, with many citing staffing shortages as a primary cause [6]. Burnout not only affects nurse well-being but also diminishes the quality of nursing care through increased errors, missed interventions, and reduced patient engagement.

Moreover, the COVID-19 pandemic has intensified these challenges, accelerating nurse attrition and recruitment difficulties. The pandemic's stressors amplified preexisting workforce shortages, forcing EDs to operate with even fewer nurses despite rising patient volumes. Recent papers review how pandemic-related pressures strained emergency nursing workforces, forcing hospitals to adopt temporary staffing solutions and reallocate personnel to maintain care delivery, often at the cost of nurse well-being and patient outcomes [5] [7].

Literature also highlights disparities in the impact of nursing shortages across geographic and institutional contexts. Rural and smaller community hospitals frequently face more severe shortages and fewer resources to mitigate their effects, resulting in pronounced care quality gaps compared to large urban centers. This variability complicates uniform policy responses and necessitates tailored strategies that consider local workforce and patient population characteristics.

Intervention studies within the literature provide evidence for strategies that can alleviate nursing shortages and improve care quality. Nurse residency programs, flexible scheduling, improved mental health support, and technological innovations such as electronic health records and automated medication administration have shown promise in enhancing nurse retention and optimizing workflow.

However, the literature stresses that these interventions require sustained investment and systemic integration to achieve lasting impact.

In summary, the extensive body of literature paints a clear picture: nursing shortages in emergency departments degrade patient care quality and safety through multiple, interconnected pathways. Addressing this crisis demands a multifaceted approach informed by evidence and responsive to the diverse challenges faced by emergency nursing workforces worldwide.[4]

4. Results

The synthesis of quantitative and qualitative data reveals a consistent and alarming trend: nursing shortages significantly impair the quality and timeliness of care in emergency departments. Across multiple studies, lower nurse-to-patient ratios were strongly correlated with longer patient wait times, delayed treatment initiation, and increased rates of patients leaving without being seen (LWBS). For example, one comprehensive study reported that emergency departments with suboptimal nurse staffing experienced an average increase of nearly 30 minutes in door-to-discharge times, directly impacting patient flow and overcrowding [2]. This delay not only prolongs patient suffering but also contributes to bottlenecks that ripple through hospital systems.

In addition to operational delays, understaffed emergency departments showed a marked increase in adverse clinical outcomes. Data from multicenter cohort studies indicated that insufficient nurse staffing was associated with a higher incidence of medication errors, patient falls, and critical events such as cardiac arrests occurring within the ED. One large-scale study found that patients in low-staffed EDs had a statistically significant increase in cardiac arrest rates compared to those in adequately staffed units, underscoring the life-or-death implications of nurse shortages [3]. These findings were reinforced by meta-analyses that linked missed nursing care—often due to workload constraints—to elevated mortality rates and preventable complications.

The impact on nursing staff was equally profound. Qualitative data from nurse interviews and surveys highlighted widespread burnout, emotional exhaustion, and moral distress caused by chronic understaffing. Approximately 53% of emergency nurses surveyed in a recent national study reported high burnout levels, with nearly half intending to leave their current positions within the next year [6]. Nurses described working extended shifts without breaks, feeling unable to provide the level of care their patients deserved, and experiencing a profound sense of professional dissatisfaction. These psychosocial stressors contribute to turnover, exacerbating staffing shortages in a self-reinforcing cycle.

Financial consequences of nursing shortages in EDs were also significant. One study quantified losses amounting to millions of dollars annually due to unstaffed bed minutes and decreased treatment capacity, which in turn led to cancellations of elective procedures and reduced hospital revenue streams [5]. This economic strain limits hospitals' ability to invest in staffing solutions or infrastructure improvements, further compounding the problem.

Case studies illuminate these findings in real-world contexts. For instance, an urban trauma center reported a 28-minute increase in average patient discharge times during prolonged nursing shortages, accompanied by a rise in LWBS rates and nurse-reported care omissions. Similarly, a rural hospital facing chronic understaffing described frequent delays in administering vital signs assessments and medication, resulting in compromised patient monitoring and safety.

Conversely, emergency departments implementing targeted interventions such as nurse residency programs, flexible scheduling, and technology-enabled workflow optimization reported measurable improvements. These included reduced patient wait times, lower nurse burnout rates, and enhanced patient satisfaction scores, suggesting that strategic investments in staffing and support can mitigate some negative outcomes associated with nursing shortages.

In summary, the results clearly demonstrate that nursing shortages in emergency departments have multifaceted adverse effects on patient care, nurse well-being, and hospital operations. These findings highlight the urgency of addressing staffing deficits to safeguard emergency care quality and patient safety.[5]

6. Discussion

The findings of this study underscore the critical and systemic nature of nursing shortages in emergency departments, revealing a cascade of consequences that compromise patient care, nurse well-being, and healthcare system sustainability. The clear association between low nurse staffing levels and delays in treatment, increased adverse events, and patient dissatisfaction reflects a failure to meet the fundamental standards of emergency care. This shortage is not merely a staffing issue—it is a patient safety crisis that demands urgent and coordinated action.

One of the most concerning aspects of the shortage is its role in perpetuating nurse burnout and turnover, which in turn deepen staffing deficits in a vicious cycle. Nurses working under chronic understaffing conditions experience moral distress as they are forced to ration care or delay essential tasks, eroding their professional fulfillment and mental health. This emotional toll contributes to high attrition rates, further destabilizing the workforce. Addressing burnout through improved work environments, mental health support, and manageable workloads is therefore essential to breaking this cycle.

The operational and financial impact of nursing shortages also cannot be overstated. Emergency departments with insufficient nursing staff face capacity limitations that lead to increased patient boarding, overcrowding, and cancellations of elective procedures. These inefficiencies not only jeopardize patient outcomes but also impose significant financial losses on healthcare institutions, limiting their ability to invest in solutions. This economic pressure frequently creates a catch-22, where financial constraints hinder efforts to alleviate staffing shortages.

The COVID-19 pandemic dramatically amplified these challenges, exposing the fragility of nursing workforces and accelerating existing shortages. The increased patient volumes and heightened acuity during the pandemic placed unprecedented strain on emergency nurses, highlighting the need for resilient staffing models that can adapt to surges. Pandemic-related disruptions in nursing education and recruitment further threaten long-term staffing stability.

Despite these daunting challenges, the literature and case studies reviewed offer hope. Interventions such as nurse residency programs improve transition-to-practice support, reducing early career attrition. Flexible scheduling and workload management help mitigate burnout, while investments in mental health resources provide critical emotional support. Additionally, technological innovations like electronic health records and automated medication administration can streamline workflows, allowing nurses to focus more on direct patient care. Policy measures that increase funding for nursing education and expand faculty capacity are also vital to growing the workforce sustainably.

Ultimately, a multifaceted strategy is required—one that addresses immediate staffing needs while building a robust pipeline of skilled nurses for the future. Collaboration among healthcare leaders, policymakers, educational institutions, and nursing professionals is essential to design and implement effective interventions. Without decisive action, the quality and safety of emergency care will continue to erode, with profound consequences for patients and healthcare systems alike.[6]

6. Conclusion

The nursing shortage in emergency departments represents a critical and multifaceted challenge that threatens the quality, safety, and sustainability of urgent healthcare delivery worldwide. This comprehensive analysis has demonstrated that inadequate nurse staffing in EDs leads to a cascade of negative outcomes, including prolonged patient wait times, increased rates of patients leaving without being seen, delayed administration of vital treatments

and a higher prevalence of adverse clinical events such as medication errors, patient falls, and cardiac arrests. Beyond these patient-centered consequences, the shortage profoundly impacts the nursing workforce itself, contributing to widespread burnout, emotional exhaustion, and job dissatisfaction. These factors culminate in elevated turnover rates, perpetuating a vicious cycle of understaffing and compromised care.

The financial ramifications for healthcare institutions are equally significant. The documented millions of dollars in lost revenue due to unstaffed beds, coupled with reduced emergency department capacity, place hospitals under immense economic strain. This financial pressure often limits the resources available to invest in staffing solutions, technology, and support programs, thereby reinforcing the systemic nature of this crisis. The COVID-19 pandemic further exacerbated these pressures by dramatically increasing patient volumes while simultaneously disrupting nursing education pipelines and accelerating workforce attrition. The pandemic exposed vulnerabilities in emergency care staffing that demand urgent attention to build more resilient systems.

Addressing this crisis requires a multifaceted, coordinated strategy that encompasses immediate relief and long-term workforce development. First and foremost, expanding nursing education capacity is vital. Increasing the number of nursing faculty, clinical training sites, and educational funding will help meet the growing demand for qualified nurses. Equally important is the implementation of robust nurse retention programs that prioritize mental health support, manageable workloads, competitive compensation, and flexible scheduling to reduce burnout and improve job satisfaction.

Technological innovations also offer pathways to alleviate workload pressures and optimize nursing workflows. The integration of electronic health records, automated medication dispensing, and telehealth support can free nurses to focus more on direct patient care

and complex clinical decision-making. Hospitals and healthcare systems must invest in these technologies while ensuring adequate training and support for staff.

Policy interventions play a crucial role in enabling these changes. Legislative action to increase funding for nursing education, support workforce planning, and incentivize retention can create an environment where emergency departments are adequately staffed and capable of meeting patient needs. Collaboration among healthcare leaders, policymakers, academic institutions, and nursing organizations is essential to develop and implement effective, evidence-based solutions.

Ultimately, the quality and safety of emergency department care depend fundamentally on the availability and well-being of nursing staff. Recognizing nurses as the backbone of emergency care and investing accordingly is not only a moral imperative but also a pragmatic necessity to ensure healthcare systems can withstand current and future challenges. Through sustained commitment to comprehensive strategies addressing both immediate staffing shortages and the structural factors driving them, healthcare systems can restore balance and resilience to emergency care delivery, safeguarding outcomes for patients and supporting the dedicated nurses who provide lifesaving care every day.[7]

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