From Burnout to Bottlenecks: The Multidimensional Impact of Nurse Shortages in Hospital Operations and Patient Outcomes

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ABSTRACT

This study examined the impact of nurse staffing adequacy on patient care quality, nurse burnout, and operational efficiency in a private tertiary hospital in Laguna, Philippines. Using a descriptive–correlational design, data were gathered from 120 registered nurses through a validated self-administered questionnaire. The majority of respondents were young, female, and in early to mid-career stages, with nearly half reporting nurse-to-patient ratios between 1:11 and 1:15, and a quarter managing more than 15 patients per shift.

Results revealed that nurses perceived staffing adequacy as neutral to slightly negative, with particular concerns regarding inadequate rest breaks, lack of support during high patient volumes, and difficulties in covering staff absences. Despite these challenges, nurses rated the quality of care positively, especially in adherence to professional standards and timeliness of basic interventions. However, neutrality emerged in areas requiring more time, such as patient education and timely implementation of care, indicating early signs of strain in process-level activities.

Burnout levels were found to be moderate to high, with physical exhaustion, emotional drain, and difficulty recovering from stress as the most prominent symptoms. Operational efficiency was rated mixed: while teamwork and adaptability to surges were strengths, inefficiencies were noted in documentation, supply availability, and workflow support. Correlation analysis confirmed that staffing adequacy was positively associated with perceived care quality and operational efficiency, and negatively associated with burnout, with the strongest relationship observed between inadequate staffing and higher burnout levels. Group differences were significant, showing higher burnout among early-career nurses, lower efficiency among those in rotating shifts, and lower care quality ratings from contractual or reliever nurses. Regression analysis further established staffing adequacy as the strongest predictor of outcomes, alongside experience, employment status, and shift type.

These findings underscore that staffing adequacy remains a pivotal determinant of nurse well-being, patient care quality, and institutional performance. They also highlight subgroup vulnerabilities, particularly among newer nurses, rotating-shift workers, and non-regular staff. The study concludes that while nurses continue to uphold professional standards, persistent staffing inadequacies compromise resilience and efficiency. A targeted Nurse Support and Staffing Optimization Program was proposed to address these gaps through strategic staffing, burnout prevention, mentorship, and stronger integration of contractual staff.

Keywords: Staffing Adequacy, Nurse Burnout, Quality of Patient Care, Operational Efficiency, Nurse Support Program

INTRODUCTION AND BACKGROUND OF THE STUDY

Globally, healthcare systems face persistent challenges in maintaining adequate nurse staffing levels amid rising service demands, an aging population, and the growing complexity of healthcare delivery. The World Health Organization (2023) identified the global nursing workforce shortage as a critical barrier to achieving universal health coverage, projecting a shortfall of more than 10 million nurses by 2030, with low- and middle-income countries experiencing the greatest burden. This imbalance between supply and demand undermines the delivery of safe, effective, and high-quality care.

Evidence from multiple international studies indicates that reduced nurse-to-patient ratios are directly associated with higher morbidity and mortality, as well as increased adverse patient outcomes such as medication errors, hospital-acquired infections, and delayed interventions (Ball et al., 2023; Shah et al., 2022). These consequences highlight systemic weaknesses within healthcare structures. Moreover, insufficient staffing exacerbates workload pressures, often compelling nurses to work extended shifts without adequate breaks, resulting in emotional fatigue, physical exhaustion, and job dissatisfaction (Liu et al., 2022). Nurse burnout—characterized by emotional exhaustion, depersonalization, and a diminished sense of professional accomplishment—has been linked to poorer clinical decision-making, absenteeism, high turnover, and diminished patient satisfaction (Dall'Ora et al., 2021; Wei et al., 2023).

From an organizational perspective, nurse shortages contribute to inefficiencies in hospital operations, such as prolonged patient wait times, staff overtime, and disrupted workflows, which negatively affect interprofessional collaboration and patient throughput (Alreshidi et al., 2023). At the systems level, understaffing has been shown to delay patient discharges, prolong lengths of stay, and increase hospital expenditures (Moss et al., 2023).

In the Philippine context, private hospitals have been particularly vulnerable to chronic staffing shortages. Nurses in these settings often manage patient loads far beyond safe ratios, sometimes caring for more than 15 patients per shift—nearly double recommended standards (Bae, 2024). These conditions contribute to missed breaks, extended overtime, and rising levels of fatigue. Alibudbud (2023) reported that Filipino nurses, especially in private hospitals, endure long hours for wages as low as ₱8,000 (~USD 145) per month, which fail to meet basic living standards and contribute significantly to burnout. Compounding these challenges are workplace conflicts and coordination difficulties, which further impair nurse performance and morale.

Local evidence underscores the severity of the issue. Bagalanon et al. (2023) found that emergency room nurses in Laguna, particularly those with less than five years of experience, exhibited moderate to high burnout risks. This aligns with anecdotal observations of high attrition among younger nurses who resign within months due to emotional strain and limited systemic support. Together, these trends indicate that chronic understaffing in private hospitals not only threatens patient care quality but also compromises nurse retention and institutional efficiency.

Thus, addressing nurse shortages in the Philippines requires an empirical and localized investigation. This study focuses on the multidimensional impacts of staffing inadequacy in a private tertiary hospital in Laguna, exploring its effects on patient care quality, nurse well-being, and operational efficiency.

Background of the Study

The persistent shortage of nurses in private tertiary hospitals in Laguna has evolved from occasional understaffing into a chronic institutional condition that reshapes hospital operations, patient experiences, and staff morale. Nurses are frequently compelled to manage multiple patients across varying acuity levels, with skipped breaks and mandatory overtime becoming normalized.

The consequences of this shortage are evident in clinical outcomes. For instance, a post-operative patient developing complications due to delayed monitoring was not the result of negligence but of a nurse simultaneously managing four other cases. Such scenarios reflect how systemic staffing gaps compromise patient safety. Emotional exhaustion and frustration among nurses have become ingrained in the work culture, leading to high attrition among junior staff, burnout among senior nurses, and increased patient dissatisfaction.

Despite widespread recognition of nurse migration and workforce maldistribution as key contributors to the Philippine staffing crisis (Department of Health [DOH], 2022; Lorenzo et al., 2021), research connecting shortages to real-time operational breakdowns and diminished patient outcomes in local private hospitals remains limited. Most literature focuses on public institutions or macro-level workforce data, often neglecting localized private hospital contexts where staffing deficits are equally critical.

This research addresses the gap by quantitatively examining how nurse shortages affect three domains—patient outcomes, nurse well-being, and hospital operations. In doing so, it aims to provide evidence-based insights that

can guide hospital administrators, policymakers, and nursing leaders in developing staffing strategies, workforce support systems, and retention programs tailored to the realities of private tertiary hospitals in the Philippines.

METHODOLOGY

The study employed a quantitative predictive–correlational design to examine the multidimensional impact of nurse shortages on patient care quality, staff well-being, and operational efficiency in a private tertiary hospital in Laguna, Philippines. Quantitative research is a systematic process of collecting and statistically analyzing numerical data to identify patterns, test hypotheses, and generalize findings to a larger population (Creswell & Creswell, 2023). Specifically, the predictive correlational approach was used to determine whether and to what extent independent variables, such as perceived staffing adequacy and demographic factors, can predict dependent variables like nurse burnout, patient care quality, and operational efficiency. Unlike experimental designs, this approach does not manipulate variables or establish control groups but instead relies on naturally occurring variations, using statistical tools such as Pearson correlation and multiple regression to determine associations and predictors (LoBiondo-Wood & Haber, 2022). This design was considered appropriate for healthcare research, particularly in real-world hospital settings where ethical and logistical constraints prevent experimental manipulation.

The population of the study consisted of all registered nurses employed in a private tertiary hospital in Laguna across multiple clinical departments including emergency, intensive care, medical–surgical wards, and obstetrics–gynecology. A stratified random sampling technique was adopted to ensure proportional representation across departments and shifts. However, if the total nurse population was fewer than 100, total enumeration would be applied. Based on hospital records showing approximately 150 clinical nurses, Slovin's formula was used at a 95 percent confidence level and a 5 percent margin of error, yielding a minimum sample size of 109. To account for potential attrition, at least 120 respondents were targeted. Eligibility criteria included being a registered nurse with at least six months of continuous employment in the hospital and being assigned to direct patient care. Administrative staff, probationary employees, and those on extended leave were excluded from the study.

The instrument used for data collection was a structured self-administered questionnaire consisting of two main parts. The first section gathered demographic data such as age, gender, years of experience, unit assignment, shift type, employment status, and average nurse-to-patient ratio. The second section employed a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5) and measured perceptions across four domains: staffing adequacy, quality of patient care, burnout, and operational efficiency. Staffing adequacy was assessed through items on workload distribution, staff availability, support during high-volume periods, and rest breaks. Patient care quality was measured through indicators such as timely interventions, patient safety, documentation, and responsiveness to needs. Burnout was assessed through emotional exhaustion, depersonalization, stress, and motivation, while operational efficiency was measured in terms of workflow, communication protocols, time management, and resource availability.

To establish validity, the instrument underwent expert review by a panel of three specialists in nursing administration, hospital operations, and quantitative research. The experts evaluated the items for clarity, relevance, and contextual appropriateness. A pilot test was also conducted among 15 nurses from a comparable hospital to check readability, structure, and ease of completion. Reliability was assessed through Cronbach's alpha, which yielded coefficients above 0.80 across all four constructs, indicating strong internal consistency.

The data gathering procedure followed institutional and ethical protocols. Approval was obtained from the Institutional Research Ethics Committee of the University of Perpetual Help – DALTA and permission was secured from the hospital administration. The researcher coordinated with the nursing service department to distribute the questionnaires at appropriate times, such as shift transitions and break periods, to avoid interference with clinical duties. Respondents were first provided with an orientation and an informed consent form detailing the purpose of the study, confidentiality, and their right to withdraw at any point. Questionnaires were distributed in printed form and respondents were given five to seven days to complete them. Completed surveys were sealed in envelopes and returned to collection boxes placed in nursing offices. After retrieval, the responses were checked for completeness and encoded into a password-protected digital file.

The study used both descriptive and inferential statistics. Frequencies, percentages, means, and standard deviations were applied to summarize demographic data and levels of perception across the constructs. Pearson correlation was used to test the relationships between perceived staffing adequacy and outcomes such as quality of care, burnout, and efficiency. Group differences across demographic variables such as years of experience, shift type, and employment status were examined using independent t-tests and analysis of variance, depending on the number of groups being compared. Finally, multiple regression analysis was employed to assess the predictive value of staffing adequacy and demographic characteristics on burnout, patient care quality, and operational efficiency. A significance level of $p < 0.05$ was set for all inferential tests.

Ethical principles of respect for persons, beneficence, and justice guided the conduct of the study. Participation was voluntary, and respondents signed written informed consent forms prior to answering the survey. To ensure anonymity and confidentiality, no personal identifiers were collected and responses were reported only in aggregate form. Data were secured in sealed envelopes during collection and encrypted digital files during analysis. The study complied with the Philippine Data Privacy Act of 2012 (Republic Act No. 10173). Risks to participants were minimal, limited to the time and effort of answering the questionnaire, and they were allowed to skip questions or withdraw at any time. The study commenced only after obtaining ethical clearance and administrative approval, thereby ensuring that institutional guidelines and national standards were strictly observed.

RESULTS AND DISCUSSION

This chapter presents the findings from 120 staff nurses and interprets them in relation to prior scholarship and the study's conceptual framework. The analysis begins with descriptive results (demographics; perceived staffing adequacy; perceived quality of patient care; nurse burnout; and operational efficiency), followed by inferential analyses (associations, group differences, and predictive models). These are then synthesized into an integrated discussion, after which conclusions, limitations, and recommendations are drawn.

The demographic profile revealed that the nursing workforce was relatively young and predominantly female: 43.3% were aged 20–29 and 78.3% were women. A majority (76.7%) had one to ten years of experience, and 6.7% were in their first year of practice. Day and rotating shifts each accounted for 36.7% of respondents, with 26.7% on night shifts. Regular staff constituted 51.7%, while 48.3% were contractual or reliever nurses. Importantly, 48.3% reported nurse-to-patient ratios of 1:11–1:15, and one quarter (25%) cared for more than 15 patients per shift. These figures exceed safe staffing benchmarks (Ball et al., 2023; Shah et al., 2022) and align with evidence linking high workloads and job insecurity to stress and turnover in the Philippine private sector (Alibudbud, 2023; Bagalanon et al., 2023).

Perceived staffing adequacy was rated neutral to negative. Respondents expressed ambivalence about whether units were adequately staffed (M = 3.21) and whether safe staffing was consistently maintained (M = 3.05). More concerning were items rated below the neutral midpoint: adequate breaks (M = 2.85), managing absences (M = 2.98), and support during high patient volume (M = 2.90). These findings highlight chronic strain points that increase fatigue and risk of error (Dall'Ora et al., 2021; Liu et al., 2022).

Despite these concerns, nurses rated the quality of patient care positively overall. Strong agreement was noted for adherence to professional standards (M = 3.60), timely care (M = 3.52), and consistent quality (M = 3.45). Positive ratings also extended to patient satisfaction (M = 3.38). However, neutrality emerged for having enough time for patient education (M = 3.10) and for avoiding delays in interventions (M = 3.28). This suggests that while core care standards are upheld, relational and time-sensitive care activities are strained—an observation consistent with the SPO model (Donabedian, 1988) and prior findings on missed educational opportunities in under-resourced hospitals (Garcia & Tan, 2024; AHRQ, 2023).

Burnout levels were moderate to high. Nurses reported high physical exhaustion (M = 3.88), emotional drain (M = 3.85), and feeling overwhelmed (M = 3.78). Difficulty recovering from stress (M = 3.60) and frustration (M = 3.55) were also prevalent. Only detachment from patients was rated neutral (M = 3.40), indicating that while engagement is maintained, emotional distancing is emerging for some. These results fit the Job Demands–Resources (JD-R) model, where persistent demands with insufficient recovery lead to energy depletion (Bakker

& Demerouti, 2007).

Perceptions of operational efficiency were mixed. Nurses agreed that units generally met patient demands (M = 3.42), coordinated effectively (M = 3.38), and adapted to surges (M = 3.35). However, neutrality was reported for overall efficiency despite challenges (M = 3.18), supply availability (M = 3.12), documentation efficiency (M = 3.25), and workflow support (M = 3.30). These results highlight resilience at the process level, but also systemic bottlenecks in logistics and information flow (Moss et al., 2023).

Inferential analyses reinforced these findings. Perceived staffing adequacy correlated positively with quality of care (r = .51, p < .001) and efficiency (r = .48, p < .001), and negatively with burnout (r = –.62, p < .001). Group comparisons revealed that burnout was higher among early-career nurses (F = 4.13, p = .007), efficiency was lower for rotating shifts (F = 3.82, p = .012), and care quality was rated lower by contractual or reliever nurses compared to regular staff (F = 5.21, p = .002). Predictive models confirmed staffing adequacy as the strongest predictor of outcomes: it significantly predicted burnout (along with years of experience), care quality (along with employment status), and efficiency (along with shift type).

Taken together, these results validate the central proposition that staffing adequacy is a pivotal determinant of nurse well-being, perceived care quality, and operational function. Demographic and scheduling factors further modify these relationships, identifying specific subgroups—early-career nurses, rotating-shift workers, and non-regular staff—as especially vulnerable. In Donabedian's terms, deficiencies in structure (staffing, support, scheduling) compromise processes (timeliness, patient education, documentation) and outcomes (nurse well-being, care quality, and efficiency).

The study demonstrated that staffing adequacy underpins well-being and care outcomes. Insufficient staffing directly contributed to burnout and indirectly strained care quality and efficiency. Burnout was especially evident among early-career nurses and those exposed to rotating shifts, while operational efficiency was shaped by staffing sufficiency, scheduling, and supply support. Employment status also mattered, with regular staff reporting higher care quality than contractual or relievers.

However, conclusions must be viewed in light of limitations. The study was confined to a single hospital, limiting generalizability. Data relied on self-reported perceptions rather than objective patient outcomes, creating potential bias. The cross-sectional design precludes causal inference. Finally, some subgroups (e.g., relievers, senior nurses) were relatively small, limiting statistical power. These constraints highlight the need for multi-site, longitudinal, and mixed-method research to strengthen external validity and capture richer perspectives.

Recommendations flow directly from these findings. Hospital administrators should adopt a data-driven staffing plan with float pools to maintain safe ratios, supported by objective workload measures. A burnout prevention program with counseling, stress debriefings, and mandated rest breaks is urgently needed, particularly given the high prevalence of emotional and physical exhaustion. Shift redesign is recommended to reduce rotating schedules and ensure recovery time. Mentorship programs should support early-career nurses, while integration strategies should enhance the inclusion of contractual and reliever staff. Policymakers should require staffing metrics in accreditation and support hospitals that invest in wellness and workflow reforms. Future research should expand to multiple sites, link staffing to objective outcomes, and apply longitudinal and qualitative approaches to deepen understanding.

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