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Impact of Nurse Staffing Levels on Patient Outcomes in Tertiary Care Hospitals: A Cross-Sectional Study

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Abstract

Nurse staffing ratios are considered a critical factor influencing the quality of patient care and clinical outcomes in healthcare settings. In tertiary care hospitals, inadequate nurse staffing may contribute to increased patient complications, medication errors, prolonged hospital stays, reduced patient satisfaction, and higher mortality rates. Despite growing global evidence supporting safe nurse-to-patient ratios, many healthcare institutions continue to experience staffing shortages and uneven workload distribution. Therefore, this study aimed to evaluate the relationship between nurse staffing ratios and patient outcomes in tertiary care settings and to assess nurses' perceptions regarding staffing adequacy, workload distribution, and management prioritization of staffing needs. A quantitative cross-sectional research design was used for this study. The research was conducted at a tertiary care hospital, and a convenience sampling technique was employed to select 30 nurses directly involved in patient care. Data were collected using a structured self-administered questionnaire developed from relevant literature. The questionnaire assessed perceptions related to staffing adequacy, workload distribution, medication

administration, patient monitoring, infection control, patient satisfaction, and quality improvement initiatives. Data were analyzed using the Statistical Package for Social Sciences (SPSS), and findings were presented in frequencies and percentages. The study findings revealed that the majority of nurses perceived current staffing ratios as inadequate for providing safe and quality patient care. Approximately 76.7% of participants disagreed that current nurse-to-patient ratios were adequate, while 73.3% reported inequitable workload distribution among nurses. More than half of the respondents expressed concerns regarding timely completion of patient care tasks, medication administration, documentation practices, patient monitoring, and infection control measures. Additionally, 70% of nurses agreed that improving staffing ratios would reduce patient complications and medical errors. The findings also highlighted concerns regarding hospital management's lack of prioritization toward adequate nurse staffing. The study concluded that inadequate nurse staffing ratios negatively affect patient care quality and clinical outcomes in tertiary care settings. Insufficient staffing contributes to increased workload, compromised patient monitoring, delayed care activities, and higher risks of complications and errors. The study recommends implementing evidence-based nurse-to-patient ratios, regular staffing assessments, equitable workload distribution, and standardized workload measurement tools to improve patient safety and healthcare quality. Further large-scale longitudinal studies are recommended to explore the long-term effects of nurse staffing ratios on patient outcomes.

Keywords: Nurse staffing ratios, patient outcomes, tertiary care hospitals, workload distribution, patient safety, nursing care quality, hospital management.

INTRODUCTION

Background:

Medical literature now demonstrates that increased nursing staff directly produces superior patient treatment results in hospital settings. Healthcare systems fail to apply minimum nurse-to-patient staffing requirements that were established through policy implementations. Specific hospitals in Queensland Australia established minimum staffing requirements in their facilities throughout 2016 (McHugh et al., 2021).

The evaluation of nurse staff involves measuring both nursing hours and the whole-time equivalent (WTE) or full-time equivalent (FTE) nursing personnel numbers. One WTE at healthcare establishments in Ireland requires 39 hours per week whereas Canadian WTE stands at 37.5 hours. Australian states together with California have created nurse-to-patient ratio regulations to solve staffing issues nationwide.

Nurses in California possess the licensing authority to focus on personal injury nursing where they manage special medical apparatus. Intensive care units at (ICUs) maintain a one-physician-for-two-patient ratio yet surgical and research units assign one physician to care for five patients according to (Butler et al., 2019). The practice of self-medication along with medication overdose mistakes and prescription errors and therapeutic failures kills approximately 500,000 principally female and child populations in Pakistan annually throughout the country. These tragic adverse patient outcomes create major financial expenses and are responsible for both patient death and economic loss. According to Canadian statistics the healthcare costs due to adverse patient outcomes totalled $1.1 billion during 2009–2010. The multinational research conducted by Aiken et al.'s five-country investigation proves staff shortages create adverse patient results and generate professional stress issues for senior nursing staff (Asif et al., 2019).

Numerous international medical research supports how sufficient nurse staffing leads to better patient security together with improved health services. The patient survival rate and complication numbers decrease together with the duration of hospital stays when medical facilities keep the nurse-to-patient ratio low specifically in critical care units like ICUs and special surgical departments. The medical risks rise when healthcare organizations employ inadequate staff levels because it leads to higher rates of medication errors, hospital-acquired infections and additional patient hospitalizations. The strength of nurse staff alongside their area of specialization and clinical background delivers a significant impact on patient treatment results.

Problem Statement

Nurse shortages at tertiary care facilities that specialize in treating complex medical conditions result in significant challenges to deliver safe patient care because of inadequate staff allocation numbers. Insufficient staffing in these health facilities leads

to a combination of higher patient deaths following hospitalization together with longer hospital lengths of stay alongside more treatment complications and decreased patient satisfaction. Healthcare organizations show poor results maintaining optimum nurse staffing standards even though clear evidence shows staffing creates positive outcomes because they face nurse shortages combined with budget issues as well as unpredicted changes in patient load. Relief staffing issues in nurse populations and professional competence distribution contribute to increased difficulties in maintaining staff adequacy particularly in critical care units. The investigation tracks nurse staffing dynamics across tertiary medical settings because the study's main purpose is to guide healthcare policy formation and resource distribution for superior healthcare delivery and improved patient healthcare outcomes.

Significance of the Study

Research plays a vital role to examine nurse staffing level effects on patient outcomes in tertiary care facilities because these institutions require specialized high-quality hospital care for complex medical patients. The study results demonstrate how increasing nurse staffing ratios is essential for anomaly prevention and quality patient experience enhancement during hospital visits. The findings from this research study can support healthcare leaders and policymakers with data-driven staffing decisions which in turn enhances both health service quality and patient safety together with maximizing hospital resource utilization.

Hypotheses

Alternative Hypothesis (HA):

Studies have proven that increased numbers of patients per nurse in tertiary care hospitals create negative clinical effects that lead to higher patient mortality together with increased complications and longer hospital stays and decreased patient satisfaction rates.

Null Hypothesis (H0):

Statistical data does not show that tertiary care hospital patient outcomes relate to the ratios of nurses allocated to patients.

Limitations:

Multiple restrictions can potentially affect this study. Analysis becomes difficult because confounding variables including healthcare recipient characteristics as well as existing medical conditions and hospital infrastructure together with national healthcare standards impede researchers from clearly establishing the relationship between staffing numbers and clinical results. Nurse qualifications together with clinical experience show marked differences between hospital units because of their influence on patient outcomes mainly in critical care and surgical departments. The study faces challenges because of inconsistent or incomplete data records in staffing and outcomes which reduces the study's accuracy potential.

The study's findings lack broad applicability because various hospitals display distinct managerial cultures and practice methods as well as different facility access to medical technology. Cross-sectional methods limit the possibility to prove causality so longitudinal research provides superior capability for measuring long-term staffing effects. The impossibility of altering staffing levels combined with ethical concerns results in observational studies becoming the most suitable method because randomized controlled trials are not practical in this setting.

Objectives of Research:

Following are the objectives of this research:

1. To evaluate the relationship between nurse staffing ratios and patient outcomes in tertiary care settings.
2. To assess the perceptions of frontline nursing staff regarding staffing adequacy, workload distribution, and management prioritization of staffing needs in relation to patient care delivery.

LITERATURE REVIEW

A study (Assaye et al., 2021) shows that nurses in low- and middle-income nations experience severe burnout whereas they also frequently face needle injury situations which lead to high levels of work absenteeism alongside strong desires to leave their profession. The research also reveals that decreased nurse staffing levels combined with excessive workloads result in increased hospital-related injuries and fatal patients cases and drug delivery errors. Research outcomes match existing information about

unfavorable nurse and patient results in high-income nations. The results from this study matter for nations with low nurse-to-patient ratios that exist across most areas with low and middle incomes.

The research dataset covered inpatient discharges numbering 761,948 together with satisfaction evaluations from 2013 patient records and nurse survey results from 1652 hospital workers at 40 institutions involving six private facilities and thirty-four public hospitals. Analyzing data with patient characteristics showed nurse staffing played a major role in patient death rates while the working environment showed direct connections to patient satisfaction and nurse performance quality evaluation. The patient nurse workload in hospitals falls between six and twenty-four individual patients. When patients receive care in hospitals with 18 patients on average per nurse their mortality risk increases by 41% and readmission rates rise by 20% while their hospital stay duration extends by 41% and they rate hospitals 68% lower than patients in hospitals with eight patients per nurse. The calculated cost savings from lower readmissions combined with reduced hospital stays would exceed the hiring expenses by US$1.2 million and US$5.4 million when additional nurse staff maintained average patient loads of 12 or 10 patients respectively. The data shows that better hospital nurse staffing levels in Chile produced improved patient outcomes such as enhanced satisfaction alongside decreased readmissions alongside shorter hospital stays and reduced inpatient mortality rates thus showing higher nursing investments lead to superior medical treatment and better value for patient care.

Hospital beds serve two-thirds of patients who belong to the lower-income and middle-class groups of Chilean society. There are frequently waiting lists for elective surgery, and people's satisfaction with healthcare is deteriorating.The safe nurse staffing laws in California (USA) and Queensland (Australia) that limit the number of patients per nurse to five, as well as bedside-care staff mixes with low percentages of nurses, are examples of how previous government plans to improve the quality of public hospitals have neglected to improve the nursing workforce as a solution and instead advocate patient-to-nurse ratios that are significantly worse than international standards(Aiken, Simonetti, et al., 2021)

At two different timepoints before the ratios were implemented (baseline) and two years after they were implemented (post-implementation) we compared Queensland hospitals that discharged comparable patients but were exempt from the ratio policy (27 intervention hospitals) with those that were not.We collected data on patient characteristics and outcomes (30-day mortality, 7-day readmissions, and length of stay [LOS]) for medical-surgical patients using standardized Queensland Hospital Admitted Patient Data that was connected to death records. The collection of surveys included 17,010 medical surgical nurses from study hospitals at two points during the implementation of the policy. The research utilized survey data for nursing staffing measurements and standardized patient data for determining outcome variations between intervention and comparison hospitals and the identification of relationship between staffing changes and outcome variations. Universal nurse staffing ratios serve as a practical mechanism that enhances both nursing staff and patient care quality and leads to cost-effective health service delivery.

Medical evidence shows that facilities employing greater numbers of nursing personnel deliver superior results for their patients. The implementation method for minimum nurse-to-patient staffing requirements remains untested because these metrics have never taken effect and received proper evaluation. The introduction of minimum nurse-to-patient staffing limitations took place at specific Queensland Australian hospitals starting in 2016. This research examined the effects of this policy on patient results along with healthcare personnel strength along with establishment of causal relationships between these two factors. These patient illnesses resulted in double the number of deaths within specific hospitals. The death rates from common surgical operations acknowledged substantial differences between 300 representative hospitals situated in nine European countries. Internal national hospital mortality rates displayed greater differences than the national mean variations observed between countries (McHugh et al., 2021). This research analyzes nurse staffing practices effect on both nursing staff and patient health conditions through systematic evaluation of existing evidence. Twenty-two studies fulfilled the established inclusion standards. A total of twenty-two research projects included twenty-one studies using the mandated

minimum nurse-to-patient staffing ratio methods and one study using the number of nurse hours per patient day approach. Both approaches were required.

Studies matching the required minimum nurse-to-patient ratio showed positive results for nurse outcomes across all investigated cases while being unclear about patient outcomes. The research evaluated the impact of nurse hours given to each patient whereas twenty-two other studies examined staff-to-patient ratio requirements. The included research utilized multiple healthcare environments from general medical facilities through general surgery wards up to combined medical/surgical units, step-down units, emergency departments, critical care sections as well as nursing homes/aged care facilities (n = 22). Researchers conducted their study in Western Australia as twenty-one studies conducted their research in California(Bourgon Labelle et al., 2019).

The determination regarding staffing numbers before each shift (commonly known as nursing establishment) forms a critical task for nursing managers who also need to decide actual shift staff deployment. The implementation of indicator and task methods usually involves measuring current operational needs instead of actively filling planned shifts at specific institutions. Measurement of nurse workload serves as the foundation for all decisions related to different staffing situations in nursing practice. These functional uses maintain a fundamental yet unspecified connection that appears unclear throughout published literature describing them.

The impact of tools or systems has attracted astonishingly small recognition even though nurse staffing levels maintain patient care quality and hospitals spend a major portion of their budget on ward staffing. Positive evidence exposing negative clinical results appeared in the past few years because ward staff count differed from expected staffing needs.

The presented evidence demonstrates greater staffing benefits rather than providing a particular approach to measure these benefits. Research findings fail to establish that these tools enable the identification of best possible staffing limits or the elimination of adverse hospital situations. The validity of some workload measurement tools receives additional support through these studies. The operational research field provides additional literature describing nurse rostering methods instead of workload

measuring methods. Research indicates that staffing requirements averaged across all patients do not produce the best patient care roster configurations. (Saville et al., 2019) (Saville et al., 2019)

Research findings show that exceeding the staffing levels defined by expert models and prototype systems leads to better patient medical results. The analysis supports the notion that people base their required staffing needs on current practices and historical staffing levels. Professional judgment shows systemic bias even though practitioners maintain its importance since no better method has emerged yet. The perceived benefits of staffing approaches exist without detailed information about their effects on prices or service quality or the costs required for system implementation (Ball et al., 2019).

Most healthcare systems officially overlook non-patient elements which have an impact on workload. Ward layout design produces minimal changes to staffing needs according to findings from Hurst (2008) but straightforward layout-related aspects like patient observation opportunities and time needed for travel significantly affect workload based on results from Maben et al. (2016, 2015). Predicting unit completion times allows organizations to control changes that result from design factors even though this process introduces an additional challenge.

MATERIALS AND METHODS

Operational Definitions

Nurse staffing ratios refer to the number of registered nurses assigned per patient in a tertiary care setting.

Mortality Rate

Mortality rates indicate the percentage of patient deaths during hospitalization. Hospital stay is measured by the total number of days a patient remains admitted for treatment.

Patient Satisfaction

Patient satisfaction reflects the perceived quality of nursing care, assessed through standardized surveys focusing on communication, responsiveness, and overall experience.

Hospital Stay

Hospital stay refers to the total number of days a patient remains admitted in a healthcare facility from admission to discharge, measured in days. It reflects the efficiency of care and can be influenced by nurse staffing ratios, with shorter stays often indicating better patient management and recovery.

This chapter describes the research approach, tools, and methods utilized to examine how nurse staffing ratios influence patient outcomes in a tertiary care setting.

Study Location and Available Resources

The research conducted at prominent tertiary care facility. The study population includes all nurses actively involved in patient care within the hospital's wards.

Sample Size Determination

A sample size of **30 nurses** selected from Nishtar Hospital using the following formula:

$$\text{Sample Size} = N/1+N.e2$$

Where:

- **N** = Total population of nurses
- **e** = Margin of error (set at 0.05)

This sample size has sufficient statistical power for data analysis and the generalizability of findings.

Demographic Profile of Participants

Participants are nurses aged **25 to 35 years**. This age range is targeted to capture the perspectives of those with relevant clinical experience and active involvement in patient care.

Variables

Independent Variable:

Nurse Staffing Ratios (measured as the number of registered nurses per patient)

Dependent Variables:

1. Patient Outcomes (measured as mortality rates, hospital-acquired infections, patient satisfaction)

Inclusion and Exclusion Criteria

Inclusion Criteria

- Nurses directly participate in patient care and staffing decisions.

- Staff members assigned to clinical wards where patient outcomes can be measured.

Exclusion Criteria

Staff members who are not directly involved in staffing decisions or Total Quality Management (TQM) practices.

Research Design and Sampling Technique

The study utilizes a **cross-sectional research design** to assess the relationship between staffing ratios and patient outcomes at a single point in time. **Convenience sampling** employed due to time limitations, allowing for the efficient selection of participants available during the data collection period.

Data Collection Tools

Data gathered using a self-administered structured questionnaire designed based on literature review and key indicators of patient outcomes.

- The questionnaire developed in English to ensure clarity and ease of understanding for the participants.
- Questions structured to gather both demographic data and insights into staffing ratios and patient care quality.
- Face-to-face distribution of the questionnaire ensure accurate and complete data collection, minimizing errors and biases.

Data Collection Process

Participants approached in their respective wards, and the questionnaire administered through direct interaction to facilitate clarification of any queries. This face-to-face method enhance data accuracy by ensuring clear understanding and immediate response.

Data Analysis Methodology

The collected data entered into statistical software such as **SPSS** for analysis.

Current nurse-to-patient ratios in unit are adequate

RESULTS AND DISCUSSION

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	4	13.3	13.3	13.3
Disagree	19	63.3	63.3	76.7
Neutral	7	23.3	23.3	100.0
Total	30	100.0	100.0	

Findings

The analysis of nurse-to-patient staffing ratios yielded alarming data results which appear in Table 4.1. Research results show that 76.7% of the 30 nurses interviewed showed dissatisfaction with existing staffing ratios (Table 4.1). The majority of nurses (63.3%, n=19) disagreed that current nurse-to-patient ratios fulfill the need and 13.3% (n=4) strongly disagreed with these ratios (Table 4.1). Out of the 30 nurses surveyed only 7 maintained an ambiguous stance toward the issue (Table 4.1). Survey data indicated every nurse viewed their working conditions unfavorably because the "agree" and "strongly agree" assessment options remained empty.

Have sufficient time to complete all patient care tasks

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	4	13.3	13.3	13.3
Disagree	12	40.0	40.0	53.3
Neutral	6	20.0	20.0	73.3
Agree	8	26.7	26.7	100.0
Total	30	100.0	100.0	

Findings:

The examination of nurses about their time adequacy in patient care activities exposed major worries (Table 4.2). Patient care tasks were reported to be incomplete by the majority of respondents (53.3%) although 40% (n=12) expressed disagreement and 13.3% (n=4) strongly disagreed with the statement of having enough time (Table 4.2). Table 4.2 reports the findings showing that 26.7% (n=8) respondents agreed about having adequate time but 20% (n=6) were undecided about the same issue. All nurses evaluated their patient care responsibilities as having an insufficient time availability.

Workload distribution is equitable among nurses

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	10.0	10.0	10.0
Disagree	19	63.3	63.3	73.3
Neutral	8	26.7	26.7	100.0
Total	30	100.0	100.0	

Findings:

Workload distribution equity among nurses received major negative responses from nursing staff according to survey results (Table 4.3). Nurses showed widespread negative feelings about workload distribution equity because 73.3% of them disagreed (63.3%, n=19) or strongly disagreed (10%, n=3) with its equity (Table 4.3). Among the respondents 26.7% (n=8) took no opinion regarding workload distribution (see Table 4.3). The survey results demonstrated complete dissatisfaction since none of the nurses selected agreement with workload distribution equity.

Medication administration is completed safely and timely

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	4	13.3	13.3	13.3
Disagree	17	56.7	56.7	70.0
Neutral	8	26.7	26.7	96.7
Agree	1	3.3	3.3	100.0
Total	30	100.0	100.0	

Findings:

The analysis of safe and timely medication administration revealed significant concerns among nursing staff (Table 4.4). An overwhelming majority of 70% expressed negative perceptions, with 56.7% (n=17) disagreeing and 13.3% (n=4) strongly disagreeing that medication administration was completed safely and timely (Table 4.4). Only 3.3% (n=1) agreed with the statement, while 26.7% (n=8) maintained a neutral position (Table 4.4). Notably, no respondents strongly agreed with the safety and timeliness of medication administration practices.

Documentation is completed accurately and timely

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	10.0	10.0	10.0
Disagree	15	50.0	50.0	60.0
Neutral	11	36.7	36.7	96.7
Agree	1	3.3	3.3	100.0
Total	30	100.0	100.0	

Findings:

The analysis of accurate and timely documentation completion revealed significant concerns among nursing staff (Table 4.5). A majority of 60% expressed negative perceptions, with 50% (n=15) disagreeing and 10% (n=3) strongly disagreeing that documentation was completed accurately and timely (Table 4.5). Only 3.3% (n=1) agreed with the statement, while a substantial 36.7% (n=11) maintained a neutral position (Table 4.5). Notably, no respondents strongly agreed with the current state of documentation practices. Proficiency levels with the documentation system. The

significant proportion of negative responses, with half of all respondents disagreeing and an additional 10% strongly disagreeing (Table 4.5), points to potential systemic issues in the current documentation process. These findings suggest a need to evaluate current documentation requirements, time allocation, and potentially the documentation system itself to better support accurate and timely record-keeping.

Hospital-acquired infections are well-controlled

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	10.0	10.0	10.0
Disagree	13	43.3	43.3	53.3
Neutral	12	40.0	40.0	93.3
Agree	2	6.7	6.7	100.0
Total	30	100.0	100.0	

Findings:

The analysis of hospital-acquired infection control revealed mixed perceptions among nursing staff (Table 4.6). Over half of the respondents (53.3%) expressed negative views, with 43.3% (n=13) disagreeing and 10% (n=3) strongly disagreeing that hospital-acquired infections were well-controlled (Table 4.6). A small percentage of 6.7% (n=2) agreed with the statement, while a substantial 40% (n=12) maintained a neutral position (Table 4.6). Notably, no respondents strongly agreed with the effectiveness of current infection control measures.

Patient satisfaction is consistently high

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	10.0	10.0	10.0
Disagree	15	50.0	50.0	60.0
Neutral	11	36.7	36.7	96.7
Agree	1	3.3	3.3	100.0
Total	30	100.0	100.0	

Findings:

The results from consistent patient satisfaction measurement showed that nursing personnel were deeply concerned (Table 4.7). The data indicated that most nurses held

unfavorable perceptions about constant patient satisfaction reaching high levels since disagreement and strong disagreement combined accounted for 65 percent of the respondents (Table 4.7). The data showed 3.3% (n=1) respondents agreed with the statement which patient satisfaction remained consistent (Table 4.7). Fifty-nine nurses (36.7% n=11) kept an unbiased stance for the same statement. The patient satisfaction records did not generate any agreement from any of the participants.

4.8 Patient assessments are thorough and complete

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	4	13.3	13.3	13.3
Disagree	14	46.7	46.7	60.0
Neutral	10	33.3	33.3	93.3
Agree	2	6.7	6.7	100.0
Total	30	100.0	100.0	

4.8.1 Findings:

The analysis of thorough and complete patient assessments revealed significant concerns among nursing staff (Table 4.8). A majority of 60% expressed negative perceptions, with 46.7% (n=14) disagreeing and 13.3% (n=4) strongly disagreeing that patient assessments were thorough and complete (Table 4.8). Only 6.7% (n=2) agreed with the statement, while 33.3% (n=10) maintained a neutral position (Table 4.8). Notably, no respondents strongly agreed with the current state of patient assessment practices.

4.9 Patient monitoring is consistent and thorough

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	10.0	10.0	10.0
Disagree	15	50.0	50.0	60.0
Neutral	11	36.7	36.7	96.7
Agree	1	3.3	3.3	100.0
Total	30	100.0	100.0	

4.9.1 Findings:

The analysis of consistent and thorough patient monitoring revealed significant concerns among nursing staff (Table 4.9). A majority of 60% expressed negative perceptions, with 50% (n=15) disagreeing and 10% (n=3) strongly disagreeing that patient monitoring was consistent and thorough (Table 4.9). Only 3.3% (n=1) agreed with the statement, while 36.7% (n=11) maintained a neutral position (Table 4.9). Notably, no respondents strongly agreed with the current state of patient monitoring practices.

4.10 Quality improvement initiatives are effective

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	6.7	6.7	6.7
Disagree	16	53.3	53.3	60.0
Neutral	11	36.7	36.7	96.7
Agree	1	3.3	3.3	100.0
Total	30	100.0	100.0	

4.10.1 Findings:

The analysis of quality improvement initiatives' effectiveness revealed significant concerns among nursing staff (Table 4.10). A majority of 60% expressed negative perceptions, with 53.3% (n=16) disagreeing and 6.7% (n=2) strongly disagreeing that quality improvement initiatives were effective (Table 4.10). Only 3.3% (n=1) agreed with the statement, while 36.7% (n=11) maintained a neutral position (Table 4.10). Notably, no respondents strongly agreed with the effectiveness of current quality improvement efforts.

4.11 Nurses frequently work overtime due to staffing shortages

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	6.7	6.7	6.7
Disagree	12	40.0	40.0	46.7
Neutral	13	43.3	43.3	90.0
Agree	3	10.0	10.0	100.0
Total	30	100.0	100.0	

4.11.1 Findings:

The analysis of nurses working overtime due to staffing shortages revealed mixed perceptions among nursing staff (Table 4.11). Less than half (46.7%) expressed disagreement with frequent overtime work, with 40% (n=12) disagreeing and 6.7% (n=2) strongly disagreeing that nurses frequently work overtime due to staffing shortages (Table 4.11). Only 10% (n=3) agreed with the statement, while a notable 43.3% (n=13) maintained a neutral position (Table 4.11). Notably, no respondents strongly agreed with the frequency of overtime work due to staffing shortages.

4.12 Current staffing ratios allow to provide safe, quality patient care

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	3.3	3.3	3.3
Disagree	11	36.7	36.7	40.0
Neutral	15	50.0	50.0	90.0
Agree	3	10.0	10.0	100.0
Total	30	100.0	100.0	

4.12.1 Findings:

The analysis of whether current staffing ratios allow for safe, quality patient care revealed mixed perceptions among nursing staff (Table 4.12). A significant 40% expressed negative views, with 36.7% (n=11) disagreeing and 3.3% (n=1) strongly disagreeing that current staffing ratios enable safe, quality care (Table 4.12). Only 10% (n=3) agreed with the statement, while half of the respondents (50%, n=15) maintained a neutral position (Table 4.12). Notably, no respondents strongly agreed with the adequacy of current staffing ratios for safe care delivery.

4.13 Improving staffing ratios would reduce patient complications or errors

	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	4	13.3	13.3	13.3
Neutral	5	16.7	16.7	30.0
Agree	14	46.7	46.7	76.7
Strongly Agree	7	23.3	23.3	100.0
Total	30	100.0	100.0	

4.13.1 Findings:

The analysis of whether improving staffing ratios would reduce patient complications or errors revealed strongly positive perceptions among nursing staff (Table 4.13). A significant majority of 70% expressed positive views, with 46.7% (n=14) agreeing and 23.3% (n=7) strongly agreeing that improved staffing ratios would reduce complications and errors (Table 4.13). Only 13.3% (n=4) disagreed with the statement, while 16.7% (n=5) maintained a neutral position (Table 4.13). Notably, this was one of the few items where strong agreement was expressed and no respondents strongly disagreed.

4.14 Float nurses can manage nurses shortage in unit

	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	12	40.0	40.0	40.0
Neutral	10	33.3	33.3	73.3
Agree	8	26.7	26.7	100.0
Total	30	100.0	100.0	

4.14.1 Findings:

The analysis of float nurses' ability to manage nurse shortages in the unit revealed mixed perceptions among nursing staff (Table 4.14). A significant portion (40%, n=12) disagreed that float nurses could effectively manage nurse shortages (Table 4.14). pproximately one-third (33.3%, n=10) maintained a neutral position, while 26.7% (n=8) agreed with float nurses' effectiveness in managing shortages (Table 4.14). Notably, no respondents expressed strong agreement or strong disagreement with the statement.

4.15 Hospital management prioritizes adequate nurse staffing

	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	16	53.3	53.3	53.3
Neutral	9	30.0	30.0	83.3
Agree	5	16.7	16.7	100.0
Total	30	100.0	100.0	

4.15.1 Findings:

The analysis of hospital management's prioritization of adequate nurse staffing revealed significant concerns among nursing staff (Table 4.15). A majority of 53.3% (n=16) disagreed that hospital management prioritizes adequate nurse staffing (Table 4.15). Nearly one-third (30%, n=9) maintained a neutral position, while only 16.7% (n=5)

agreed with management's prioritization of staffing (Table 4.15). Notably, no respondents expressed strong agreement or strong disagreement with the statement, suggesting moderate but clear concerns about management's approach to staffing.

5.2 Conclusion:

The research reveals a strong direct link between direct patient care quality and nurse staff to patient ratios operating in tertiary hospitals. The study confirms the fundamental premise that lower staffing ratios produce worse patient results and degrade healthcare quality. Medical staff strongly confirms that current staff numbers fail to produce sufficient patient care delivery. The data shows clear proof that 70 percent of nurses confirmed better staff-to-patient ratios would decrease both complications for patients and medical mistakes. The study documented concerning management priorities by showing frontline staffing inadequacies through nurses' responses that hospital management does not prioritize sufficient nurse staffing (16.7%). Results demonstrate that immediate systematic policy changes in staffing processes are necessary to establish safe patient care environments which meet quality standards.

5.3 Recommendations:

Rates for improving nurse staffing and patient care quality include the following main points:

5.3.1 For Hospital Administration:

- Implement evidence-based nurse-to-patient ratios
- Develop systematic workload distribution policies
- Establish regular staffing level assessments

5.3.2 For Nursing Management:

A review followed by optimized scheduling practices for staff should be implemented.
The hospital must establish a system that tracks patient care metrics on a regular basis.
Medical facilities should build approaches to diffuse workloads fairly among staff members.

5.3.3 For Future Research:

More comprehensive studies should explore the prolonged effects of nurse-to-patient ratios on treatment results using big groups of participants.

5.3.4 Specialized Healthcare:

- Establish mandatory minimum nurse-to-patient ratios

Healthcare facilities should create protocols for acceptable staffing ratios across specialized patient care areas.

- Implement standardized workload measurement tools
- Conduct regular staffing adequacy assessments

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