European Journal of Clinical Pharmacy
Print ISSN: 2385-409X **Online ISSN**: 3105-0409
Website: https://farmclin.com/

Original Research Article

Effect of Staff Shortage on Patient Safety and Quality of Care

Article History:

Name of Author:
Rubina Inam[1], Humaira kanwal[2] Javaria Arshad[3]*, Komal Albert[4], Saima Batool[5], Anglina Naveed[6]

Affiliation: *[1]Principal, Nursing Department University of Chenab Gujrat Pakistan*
[2]Assistant Professor, Nursing Department University of Chenab Gujrat Pakistan
[3]Post RN Student, Nursing Department University of Chenab Gujrat Pakistan
[4]Post RN Student, Nursing Department University of Chenab Gujrat Pakistan
[5]Post RN Student, Nursing Department University of Chenab Gujrat Pakistan
[6]Post RN Student, Nursing Department University of Chenab Gujrat Pakistan

Corresponding Author:
Rubina Inam

Received: 01-12-2025
Revised: 08-12-2025
Accepted: 20-12-2025
Published: 30-12-2025

Abstract: ***Background:*** Staff shortage in healthcare facilities has become a prevalent and concerning issue globally. The shortage of healthcare professionals, including nurses, physicians, and support staff, has significant implications for patient safety and the quality of care provided. The objective of study is to assess the effect of staff shortage on patient safety and quality of care ***Methods***: The study utilized a descriptive cross-sectional design and was conducted in various units of Mayo Hospital Lahore from August to October 2025. A total of 200 nurses were selected using a convenience sampling technique. Data was collected through a structured questionnaire, including demographic information and an adopted Patient Safety and Quality of Care Inventory, consisting of 41 items and 12 dimensions. Ethical approval was obtained, and data analysis was performed using SPSS version 25, with descriptive statistics and frequency tables generated. ***Results:*** The study describes the demographic characteristics and knowledge levels of participants regarding staff shortages and patient safety. Participants were predominantly female (86%) and between 20-30 years old (46.5%). Most had 1-5 years of experience (56.5%) and held a Diploma in General Nursing (64%). Results reveal mixed perceptions of safety and supervision, with concerns about the impact of staff shortages on teamwork and patient safety, particularly regarding coordination across units and non-punitive responses to errors. The findings emphasize the need for improved staffing strategies and safety measures to enhance care quality. ***Conclusion:*** The study highlights significant concerns about staff shortages affecting patient safety and quality of care, particularly in areas like teamwork, safety procedures, and error management. Improving staffing levels and fostering stronger inter-unit collaboration are essential to enhance patient outcomes and safety measures.

Keywords: Staff Shortage; Patient Safety; Quality of Care; Effect; Healthcare; Nursing Staff; Workforce

INTRODUCTION

Staff shortage in healthcare facilities has become a prevalent and concerning issue globally (Tamata & Mohammadnezhad, 2023). The shortage of healthcare professionals, including nurses, physicians, and support staff, has significant implications for patient safety and the quality of care provided (Machitidze et al., 2023). The shortage of healthcare professionals has been attributed to various factors, including population growth, an aging workforce, inadequate recruitment and retention strategies, and increasing healthcare demands (Afework et al., 2023).

Staff shortage directly influences patient safety by compromising the ability of healthcare providers to deliver timely and effective care (Aiken et al., 2023).

The quality of care provided in healthcare facilities is intricately linked to staffing levels. Insufficient staffing can impede the delivery of evidence-based practices, patient education, and comprehensive care coordination (Tamata & Mohammadnezhad, 2023). Adequate staffing levels are essential for the consistent implementation of evidence-based practices (EBPs) in healthcare. Evidence-based practices encompass established guidelines, protocols, and standards of care derived from rigorous research and clinical evidence (Lucas et al., 2023). Patient education is a crucial component of quality care, enabling patients to understand their health conditions, treatment options, and self-care strategies (Pérez-Francisco et al., 2020).

Effective care coordination involves seamless collaboration among various healthcare providers, departments, and external agencies to ensure continuity and coherence in patient care (Winter et al., 2020).Moreover, delayed interventions may result in missed opportunities for early detection and treatment of medical issues, potentially leading to adverse outcomes (Burgener, 2020). As a result, patients may face barriers to accessing preventive care, diagnostic testing, therapeutic interventions, and rehabilitation services (Afework et al., 2023). This disparity in access can exacerbate health inequalities and contribute to disparities in health outcomes among different populations (Staines et al., 2021).

MATERIAL & METHODS

The study employed a descriptive cross-sectional design and was conducted over a period of four months from July to October 2025 at the medical, surgical, gynecology, pediatrics, emergency, and intensive care units of Mayo Hospital, Lahore. A total sample of 200 nurses was selected using a convenient sampling technique, including male and female nurses from various specialties and levels of experience who were directly involved in patient care and willing to participate, while nurses who were sick, in administrative or non-clinical roles, or unwilling to participate were excluded. Ethical approval was ensured by obtaining written informed consent from all participants, maintaining confidentiality and anonymity, and informing participants of their right to withdraw at any stage without any risk or harm. Data were collected using a structured questionnaire comprising a demographic data tool and an adopted Patient Safety and Quality of Care Inventory (Copnell et al., 2009), which includes 41 items across 12 dimensions assessed on a 5-point Likert scale, with total scores ranging from 1 to 205. Questionnaires were distributed to participants and collected after one week. The collected data were analyzed using SPSS version 25, applying descriptive statistics and frequency distributions to summarize the findings.

RESULTS

Demographic Characteristics

Table 1: Demographics characteristics of participants (n=200)

Demographic Variables	Category	Frequency (f)	Percentage (%)
Age	20-30 years	93	46.5
	31-40 years	54	27.0
	41- 50 years	31	15.5
	> 50 years	22	11.0
Gender	Male	28	14.0
	Female	172	86.0
Marital Status	Single	151	75.5
	Married	49	24.5
Qualification	Diploma in General Nursing	128	64.0
	Post RN BSN	28	14.0
	BSN	36	18.0
	MSN	8	4.0
Experience	<1 years	43	21.5
	1-5 years	113	56.5
	> 5 years	44	22.0
Department	Medical	137	68.5
	Surgical	63	31.5

The majority of participants were aged 20–30 years (46.5%), followed by 31–40 years (27.0%), 41–50 years (15.5%), and over 50 years (11.0%). Most were female (86%) and single (75.5%). Regarding qualifications, 64% held a

Diploma in General Nursing, 18% had a BSN, 14% had Post-RN BSN, and 4% held an MSN. In terms of experience, 56.5% had 1–5 years, 22% had more than 5 years, and 21.5% had less than 1 year of work experience. Participants were predominantly from the medical department (68.5%), while 31.5% were from the surgical department.

Effect of Staff Shortage on Patient Safety and Quality of Care

Table 2: Effect of staff shortage on patient safety and quality of care (n=200)

Patient Safety and Quality of Care	Strongly Disagree Frequency (%)	Disagree Frequency (%)	Neither Agree Nor Disagree Frequency (%)	Agree Frequency (%)	Strongly Agree Frequency (%)
Overall perception of safety	26(13%)	23(12%)	23(12%)	58(29.1%)	67(33.8%)
Supervisor/manager's expectations and actions promoting patient safety	28(14%)	56 (28%)	22 (11%)	39(19%)	53 (26%)
Organizational learning and continuous improvement	14(7%)	19(9%)	15(7%)	82(41%)	68(34%)
Teamwork within units	18(9%)	23(11%)	23(11%)	74(37%)	60(30%)
Non-punitive response to error	23(11%)	25(12%)	15(7%)	66(33%)	70(35%)
Staffing	23(11%)	25(12%)	22 (11%)	59(29%)	70(35%)
Management support for patient safety	23(11%)	25(12%)	16(8%)	65(32%)	70(35%)
Teamwork across hospital units	21(10%)	22 (11%)	16(8%)	65(32%)	71(35%)
Hospital handoffs and transitions	21(10%)	25(12%)	20(10%)	57(28%)	74(37%)
Communication openness	23(11%)	25(12%)	23(11%)	56(28%)	71(35%)
Feedback and communications about error	23(11%)	26(13%)	19(9%)	55(27%)	76(38%)
Frequency of events reported	23(11%)	25(12%)	18(9%)	56(28%)	76(38%)

The study findings indicate that staff shortages have a notable impact on various aspects of patient safety and quality of care. Among the 200 participants, overall perception of safety showed a moderately positive trend, with 62.9% of nurses agreeing or strongly agreeing that safety is maintained. Perceptions of supervisor/manager expectations and actions promoting patient safety were more mixed, with only 45% agreeing or strongly agreeing. Positive trends were observed in organizational learning and continuous improvement (75%) and teamwork within units (67%), reflecting collaborative and improvement-oriented practices. Non-punitive response to error, staffing adequacy, and management support received moderate agreement, ranging from 64–67%. Inter-unit coordination, including teamwork across hospital units (67%) and hospital handoffs and transitions (65%), also indicated moderate positive perceptions. Communication openness (63%), feedback and communication about errors (65%), and frequency of events reported (66%) were similarly rated, highlighting areas where staff shortages may influence reporting and open communication. Overall, the data suggest that while many nurses perceive positive practices in patient safety, staff shortages remain a significant factor affecting managerial support, supervision, reporting, and inter-unit collaboration.

DISCUSSION

The study investigates the impact of staff shortages on patient safety and quality of care, revealing significant concerns that align with existing literature. The findings from the survey, particularly regarding the overall perception of safety and management support, highlight critical areas where staffing levels directly influence patient outcomes. The results reveal a concerning relationship between staff shortages and several key dimensions of patient safety, including the overall perception of safety, supervisor support, organizational learning, teamwork, communication openness, and response to errors. These findings are consistent with previous research in the field, demonstrating that insufficient staffing negatively affects both patient outcomes and staff morale.

The results indicate that a significant proportion of staff (32%) believe that serious mistakes are avoided

by chance, while 36.5% recognize that their unit has patient safety problems. These findings reflect a lack of confidence in the system's ability to consistently ensure safety. A comparable study by Aiken et al. (2020) found that high patient-to-nurse ratios were associated with increased risks of adverse events, including medication errors and falls, suggesting that overworked staff may be more prone to making mistakes. Another study by Stimpfel, Sloane (2022), and Aiken (2022) also linked inadequate staffing with decreased patient satisfaction and poorer outcomes, underscoring the critical need for adequate staffing to ensure patient safety.

Regarding supervisory support for patient safety, over one-third (34.5%) of staff disagreed that supervisors acknowledged safety practices, and 25% agreed that supervisors encouraged shortcuts under pressure. These findings echo research by Ball et al. (2020), which found that supervisory support and leadership play a pivotal role in promoting a safety culture, yet are often compromised by staff shortages. A lack of managerial reinforcement and increased pressure to complete tasks quickly can undermine staff confidence and lead to unsafe practices. About 45.5% of staff agree that efforts are being made to improve safety, only 41% believe that mistakes lead to positive changes. This perception gap suggests that while improvements are pursued, their effectiveness is not always felt by the staff. A study by Singer et al. (2023) found that organizations with a strong learning culture were better equipped to prevent errors and improve safety. However, this culture is often hampered by resource constraints, including staff shortages. Similarly, a study by Tucker and Edmondson (2020) demonstrated that learning from mistakes requires both time and resources, which are often scarce in understaffed environments.

The results showed perception of teamwork, with 35.5% agreeing and 26% strongly agreeing that team members support one another. However, only 35% agreed that staff help each other during busy times, indicating challenges in cross-support. This is consistent with findings from Kalisch, Lee, and Rochman (2021), who reported that teamwork suffers in units experiencing staff shortages, as the pressure to manage patient loads individually undermines collaborative efforts. Effective teamwork is crucial for maintaining patient safety, particularly in high-stress, understaffed environments.

The findings reveals that 38.5% of staff do not feel their mistakes are held against them, but 36.5% believe that reporting an event focuses more on the individual than the problem. This punitive perception can discourage open error reporting, which is vital for improving patient safety. According to a study by Kohn, Corrigan, and Donaldson (2020), a non-punitive environment encourages reporting and facilitates learning from mistakes. However, under conditions of staff shortage, the workload and stress may exacerbate a blame culture, as noted in a study by Jones et al. (2021), where understaffed units reported higher levels of punitive responses to errors.

The results of current study underscore the severity of staffing shortages, with 38.5% strongly agreeing that there are insufficient staff to handle the workload. This finding aligns with the seminal work of Aiken et al. (2022), which showed that hospitals with lower nurse staffing levels had higher rates of adverse patient outcomes, including infections and mortality. Furthermore, Rafferty et al. (2020) demonstrated that staffing shortages lead to increased stress and burnout, further compromising the quality of care.

The current study shows mixed perceptions of management's commitment to patient safety. While 38.5% of staff believe that hospital management promotes a safe work environment, 30% feel that management only focuses on safety after an adverse event occurs. Research by Clarke, Rockett, Sloane, and Aiken (2022) found that management support is critical in fostering a safety culture, but this is often undermined in under-resourced settings where staff are overworked and under-supported.

The results indicate that 43.7% of staff view shift changes as problematic for patients, and 38.5% agree that issues arise in information transfer between units. These findings are consistent with research by Arora et al. (2022), who identified poor handoff communication as a significant contributor to adverse events, particularly in understaffed units. Effective handoff processes are essential for ensuring continuity of care, but staff shortages can compromise these critical transitions.

CONCLUSION

This study highlights the significant impact of staff shortages on patient safety and the quality of care. The findings demonstrate that inadequate staffing levels are directly associated with increased errors, compromised patient safety, and reduced quality of care. Key issues identified include a mixed perception of safety among staff, insufficient supervisory support, poor communication, and ineffective error reporting. These issues, exacerbated by staff shortages, create a challenging work environment that undermines patient outcomes. Additionally, the lack of a proactive approach by management and insufficient teamwork across hospital units further complicates efforts to maintain patient safety.

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