

ORIGINAL ARTICLE

Perceptions of Critical Care Nurses on Staff Shortages in Intensive Care Units at Princess Marina Hospital, Gaborone, Botswana: A Case Study

Mothusi Maika

University of Zambia

ABSTRACT

Background: Staff shortages in Intensive Care Units significantly impact healthcare systems worldwide. They compromise patient outcomes and place considerable strain on nursing professionals. These shortages shape how nurses perceive their roles, often raising concerns about workload, job satisfaction, safety, career development, and systemic challenges. This study explored how critical care nurses at Princess Marina Hospital in Gaborone, Botswana perceive staff shortages, aiming to inform future interventions and policy improvements.

Methods: A qualitative case study design was used. Data were collected from ten ICU nurses through unstructured in-depth interviews guided by open-ended questions and follow-up prompts. Observations were also conducted using a structured checklist without disrupting workflow. Data saturation was reached at ten participants. Thematic analysis was used to identify patterns and themes.

Results: The analysis revealed four main themes and eleven subthemes. Compromised Quality of

Patient Care included delayed responses, reduced monitoring, and increased risk of errors. Physical and Psychological Impact on Nurses covered increased workload, physical fatigue, psychological stress, and low job satisfaction. Ineffective Coping Strategies included over-reliance on overtime, limited use of support systems, and misuse of sick leave. Role of Adequate Staffing in Patient Care highlighted improved patient outcomes and better nurse well-being.

Conclusion: Staff shortages in the ICU negatively affect both patient care and nurse well-being. Strengthening staffing levels and implementing effective recruitment policies are critical steps to improve care quality, reduce nurse burnout, and support a resilient healthcare workforce.

INTRODUCTION

Critical Care Nursing (CCN) involves caring for patients with life-threatening conditions such as trauma, major surgery, or severe medical complications, requiring constant monitoring, rapid decision-making, and coordination of interdisciplinary care.^{1, 2, 3} This makes the role both mentally and physically demanding. Internationally,

Corresponding author:

Mothusi Maika,

Email; maikamothusi@gmail.com

Keywords: Perceptions, Critical care nurses, Intensive Care Unit, Staff shortages, Challenges, Coping strategies, Patient care quality

This article is available online at: <http://www.mjz.co.zm>, <http://ajol.info/index.php/mjz>, doi: <https://doi.org/10.55320/mjz.52.5.754>
The Medical Journal of Zambia, ISSN 0047-651X, is published by the Zambia Medical Association

© This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



countries like the United Kingdom (UK) and the United States of America (USA) recommend a 1:1 nurse-to-patient ratio for level 3 ICU patients and 1:2 for level 2 patients, based on evidence that these ratios improve patient outcomes and reduce nurse burnout.^{4, 5} In Sub-Saharan Africa, including Botswana, meeting these standards is challenging due to financial constraints, limited training programs, and a shortage of skilled critical care nurses.^{6, 7, 8, 9, 10}

At Princess Marina Hospital (PMH), Botswana's largest public and teaching hospital, nurse-to-patient ratios typically fall below international standards, about 1:2 during the day and 1:3 at night, raising concerns over care quality and nurse well-being.^{9, 11, 12} The shortage of critical care-trained nurses intensifies the workload and limits the quality of care delivered. Key contributing factors include a lack of specialized training, poor nurse retention, underfunding, and the demanding nature of the ICU environment.^{8, 11, 13, 14} Some facilities rely on temporary or less-qualified staff, which does not address the root issues. These conditions lead to increased errors, delayed interventions, and poor patient outcomes, further undermining nurse morale and contributing to burnout and attrition.^{8, 16, 17, 18, 19}

This study explores the perceptions of ICU nurses at PMH regarding staffing shortages, aiming to inform policies that improve nurse support, staffing, and patient care.

METHODS

Study design

A case study design was used to explore the perceptions of critical care nurses regarding staff shortages in the ICU at Princess Marina Hospital. The case in this study is the ICU nurses. This approach is appropriate for this study because it allows for an in-depth and context-specific exploration of the perceptions of the critical care nurses on staff shortages in ICUs, as it captures the unique characteristics of the views and opinions of the nurses. It supports flexible data collection methods such as interviews and observation

checklists,²⁰ which this study requires to gather rich, narrative data.

Study setting

The study was conducted at Princess Marina Hospital (PMH) in Gaborone, Botswana's largest publicly funded referral and teaching hospital. PMH ICU is an 8-bed unit staffed by anaesthetists and one intensivist, with a nurse-to-patient ratio of 1:2 by day and 1:3 by night.¹ Despite its status and broad services, PMH faces staffing challenges, making it a suitable site to explore ICU nurses' perceptions of staff shortages. Its context as a middle-income country hospital provides relevant insights for similarly resourced settings.

Study population and sampling

The study targeted critical care nurses at PMH ICU in Gaborone, focusing on those providing direct patient care. Purposive sampling was used to select nurses with over six months of ICU experience. Ten participants were interviewed until data saturation was reached. Inclusion criteria required nurses to have a minimum of six months' experience in the ICU and to provide direct patient care. Additionally, participants needed to voluntarily consent to participate in the research. Nurses who were unavailable due to leave during data collection were excluded.

Data collection

This study used unstructured interviews and an observation checklist to explore ICU nurses' perceptions of staff shortages. Interviews, guided by one main question and real-time probes, lasted 45–60 minutes and were held privately in the ICU. Recruitment was via WhatsApp, followed by individual consent. Audio was recorded securely, and participants were debriefed afterward.

Observations focused on visible behaviours such as expressions of frustration, rushing through tasks, and skipped breaks, and they were conducted discreetly to avoid workflow disruption. Tools were refined through expert input and a pilot test. Combining interview narratives with observational

data during data triangulation enhanced interpretation by providing multiple perspectives on how staffing shortages affected care delivery. This approach enabled a more nuanced and credible understanding of both perceived and observed impacts.

To ensure rigor, the researcher-maintained reflexivity through an audit trail and reflective journaling. Participants were kept informed, and findings were shared in accessible language to promote engagement.

Data analysis

Data analysis in this study followed Braun and Clarke's six-step thematic analysis approach. The process began with familiarization, where interviews were manually transcribed and translated from Setswana to English, followed by repeated reading and listening to the recordings to ensure a deep understanding of the data. Initial codes were then generated by summarizing and labelling meaning units, which were further grouped into categories aligned with the research objectives. In the third step, the researcher searched for themes by clustering related codes into preliminary themes and sub-themes. These were then reviewed and refined to ensure coherence and relevance, leading to the identification of four major themes and corresponding sub-themes. Finally, the data was synthesized and written up, drawing on thematic patterns to present the perceptions of critical care nurses regarding staff shortages in the ICU.²¹

Trustworthiness

Trustworthiness was ensured through credibility, transferability, dependability, and confirmability.²² Credibility involved data triangulation, member checking, and prolonged ICU engagement. Transferability was supported by thick descriptions and purposive sampling. Dependability was maintained through detailed documentation reviewed by supervisors, and confirmability was achieved via reflexive journaling, an audit trail, and data triangulation.

Pilot study

A pilot study at PMH ICU tested the data collection tools with three diverse participants. Minor adjustments were made to the observation checklist, adding subcategories for teamwork and communication. The pilot also helped the researcher gain interviewing experience and ensured readiness for the main study.

Ethical considerations

The study followed strict ethical standards, with approvals from the National Health Research Authority Zambia (REF. NO.NHRAR-R-1768/17/07/2024), UNZABREC (REF.NO.5740-2024), Botswana Ministry of Health HRDC (REF.NO.HPRD: 6/14/1), and PMH Ethics Committee (REF.NO.PMH 2/11AII (598)). Informed consent was obtained after full briefing and review time. Confidentiality was ensured through coding, anonymization, and secure data storage. Participants were reminded of their right to withdraw, and beneficence was upheld by minimizing risks and conducting interviews in private, supportive settings.

RESULTS

Interviews were conducted with 10 participants, at which point data saturation was reached, as no new themes or insights emerged and responses became repetitive. Among the participants, two were male. Their ICU experience ranged from 1 to 9 years, while their overall nursing experience varied from 3 to 24 years. Most participants held diplomas in nursing and midwifery, with a few having bachelor's degrees and post-basic qualifications in critical care nursing.

Themes and sub-themes that emerged

Four themes emerged from the thematic analysis and include compromised quality of patient care, physical and psychological impact on the nurse, Ineffective coping mechanisms and role of adequate staffing in patient care. The summary of the themes, sub-themes and codes are presented in table 3, which is followed by their description

Table 3: Themes and sub-themes that emerged from the study

Theme	Sub-theme	Codes from interviews	Codes from observations	Observation note No.	Observation description
1. Compromised quality of patient care	Delayed responses to patient needs	Delays in attending to non-critical patients due to prioritization of emergencies, Missed minor care interventions	Long waiting times for non-emergency procedures, Postponement of routine procedures	1	At 2:15 PM, an alarm for low oxygen saturation on patient C's monitor was not addressed until 2:22 PM due to the nurse repositioning patient A.
	Reduced monitoring of patients	Reduced frequency of routine checks due to high workload, Inability to provide individualized care	Fewer routine rounds on stable patients, Lack of personalized attention during patient interactions	2	During peak workload, a nurse prioritized emergency care over scheduled rounds, resulting in missed monitoring and delayed interventions
	Increased risk of errors	Miscommunication during handovers resulting in incomplete patient information, Fatigue impacting cognitive function, increasing error rates	Incorrect documentation or omissions in patient records, Noted errors or near-misses in patient documentation or care, Visible signs of fatigue affecting concentration and accuracy	3	During a 7:30 AM handover, a nurse rushed documentation, omitting a medication change that confused the incoming nurse.
2. Physical and psychological impact on the nurse	Increased workload and physical fatigue	Complaints of exhaustion after shifts, Long shifts without adequate rest periods, Difficulty in maintaining physical stamina over consecutive shifts	Visible fatigue, slower response times during later hours, Nurses seen taking short rest breaks, showing signs of fatigue, Nurses seen with slouched posture, slower movements as shifts progress	4	A nurse was observed skipping breaks and exhibiting signs of fatigue, such as slow responses and slouched posture.
	Psychological stress	Anxiety about potential errors due to high workload, Feelings of being overwhelmed by workload, Burnout symptoms, including emotional exhaustion and decreased motivation	Frequent expressions of stress, fidgeting, or sighing, Lack of participation in available support or counselling services	5	Nurses had minimal interaction with patients during busy periods, suggesting emotional withdrawal and reduced engagement.

	Reduced job satisfaction	Dissatisfaction with inability to provide optimal care, Feelings of unappreciation and low morale, Contemplating leaving the profession due to stress, Decreased job motivation and fulfilment	Nurses expressing frustration or disappointment during interactions, Reduced enthusiasm and engagement during tasks, Discussions among nurses about career dissatisfaction	6	At shift end, a nurse was seen staring blankly at the screen. When asked if they were okay, they responded, "I'm just counting down the days until my next day off."
1. Ineffective coping strategies	Over-reliance on overtime	Taking on additional shifts to cover staff shortage, Dependence on additional hours to meet patient care demands	Nurses frequently working beyond their scheduled hours, Extended working hours resulting in visible fatigue	7	A nurse extending a morning shift showed visible fatigue during evening assessments.
	Minimal use of support systems	Hesitation to seek psychological support or counselling, Stigma associated with seeking mental health support, Preference for self-reliance in managing stress	Rare discussions about mental health support among staff, Lack of engagement in wellness programmes	8	No evidence of structured debriefing or peer support during or after stressful events.
	Abuse of sick leaves	Increased frequency of sick leave usage to cope with stress, Acknowledgement of using sick leave for rest rather than actual illness, Strain on remaining staff due to frequent sick leave among colleagues	Sudden and frequent sick leave applications among staff		
Role of adequate staffing in patient care	Improved patient outcomes	Perception that adequate staffing leads to better patient recovery due to timely and comprehensive care, Enhanced patient satisfaction with adequate nurse attention, Reduction in complications when staffing is sufficient, More thorough monitoring and personalized care	More timely and efficient patient care with minimal delays, Detailed attention to patient needs and documentation, Increased nurse-patient interactions, fostering positive feedback, Decreased frequency of care-related issues or emergencies	9	A nurse with a 1:1 ratio responded to patient needs promptly and delivered thorough care.
	Enhanced nurse well-being	Reduced workload and improved job satisfaction, Increased focus and confidence during shifts, Better team dynamics and communication with adequate staffing, Greater sense of accomplishment and fulfilment	Fewer signs of stress and burnout in adequately staffed shifts, More relaxed and engaged nursing staff, Clear and efficient task management, Observed collaborative efforts and positive team interactions, Nurses demonstrating pride and satisfaction in their work	10	During a fully staffed morning shift, nurses took breaks, engaged in positive peer interactions, and displayed uplifted demeanours.

Theme 1: Compromised quality of patient care

Participants consistently emphasized that staff shortages negatively impacted their ability to deliver high-quality care. Recurring issues included delayed critical interventions, infrequent patient monitoring, and unmet individualized care needs. Three subthemes emerged: delayed responses to patient needs, reduced patient monitoring, and increased risk of errors.

Subtheme 1.1: Delayed responses to patient needs

Both interviews and observations revealed how staff shortages hindered timely responses, particularly during emergencies. Nurses described prioritizing critical cases at the expense of others.

“Even when we know a patient needs immediate care, we’re sometimes forced to delay because we simply don’t have enough hands.” – Participant 6

These accounts were reinforced by observational data:

Observation 1: At 2:15 PM, an alarm for low oxygen saturation on patient C’s monitor was not addressed until 2:22 PM due to the nurse repositioning patient A.

Subtheme 1.2: Reduced patient monitoring

Nurses reported difficulty maintaining close and continuous monitoring due to insufficient staff, compromising patient safety and contributing to emotional strain.

“It’s impossible to monitor patients as closely as we should when we’re short-staffed. We do our best, but things can slip through the cracks.” – Participant 4

Observational findings validated these concerns:

Observation 2: During peak workload, a nurse prioritized

emergency care over scheduled rounds, resulting in missed monitoring and delayed interventions.

Subtheme 1.3: Increased Risk of Errors

Participants described how pressure and fatigue increased the likelihood of mistakes, particularly during medication administration or documentation.

“When you’re rushing between patients, the chances of making a mistake increase. It’s scary because even a small error can have serious consequences.” – Participant 1

Supporting observations included:

Observation 3: During a 7:30 AM handover, a nurse rushed documentation, omitting a medication change that confused the incoming nurse.

Theme 2: Physical and Psychological Impact on the Nurse

Staff shortages were associated with significant physical fatigue and psychological stress, directly affecting job satisfaction and performance. Three subthemes emerged: increased workload and physical fatigue, psychological stress, and reduced job satisfaction.

Subtheme 2.1: Increased workload and physical fatigue

Nurses described working extended hours without breaks, leading to exhaustion.

“By the end of my shift, I feel completely exhausted, both physically and mentally.” – Participant 5

Observation 4: A nurse was observed skipping breaks and exhibiting signs of fatigue, such as

slow responses and slouched posture.

Subtheme 2.2: Psychological stress

Emotional strain and burnout were frequently reported, though difficult to observe directly. Nurses shared feelings of being overwhelmed and unsupported.

“I’ve had moments where I felt on the verge of a breakdown.” – Participant 3

Indirect indicators were noted:

Observation 5: Nurses had minimal interaction with patients during busy periods, suggesting emotional withdrawal and reduced engagement.

Subtheme 2.3: Reduced job satisfaction

Participants expressed frustration about being unable to meet professional expectations, leading to disengagement.

“This job doesn’t feel fulfilling anymore.” – Participant 6

Observation 6: At shift end, a nurse was seen staring blankly at the screen. When asked if they were okay, they responded, “I’m just counting down the days until my next day off.”

Theme 3: Ineffective coping strategies

Nurses reported relying on coping mechanisms that were ultimately counterproductive, including excessive overtime, limited use of support systems, and sick leave misuse.

Subtheme 3.1: Over-reliance on overtime

Working extra shifts was a common strategy to manage staff shortages, though it led to further fatigue.

“Working overtime has become the norm, but it’s not sustainable.” – Participant 6

Observation 7: A nurse extending a morning shift showed visible fatigue during evening assessments.

Subtheme 3.2: Minimal use of support systems

Despite available resources, most nurses avoided using them due to stigma or time constraints.

“There’s a fear of being seen as weak if you seek help.” – Participant 7

Observation 8: No evidence of structured debriefing or peer support during or after stressful events.

Subtheme 3.3: Abuse of sick leave

Some nurses admitted to using sick days to recover from exhaustion, though this behaviour was not directly observable.

“Sometimes, taking a sick day is the only way to get some rest.” – Participant 1

Patterns of frequent, unplanned sick leave suggested this as a silent form of coping.

Theme 4: Role of adequate staffing in patient care

Nurses emphasized that optimal staffing improved both patient care and staff morale. Two subthemes were identified: improved patient outcomes and enhanced nurse well-being.

Subtheme 4.1: Improved patient outcomes

Proper staffing enabled more proactive, thorough care, which enhanced recovery rates and patient satisfaction.

“When we have enough staff, we can give each patient the attention they deserve.” – Participant 9

Observation 9: A nurse with a 1:1 ratio responded to patient needs promptly and delivered thorough care.

Subtheme 4.2: Enhanced nurse well-being

Full staffing eased the workload, allowing nurses to work more comfortably and leave shifts less fatigued.

“On days when we have a full team, I feel less rushed and more capable.” – Participant 8

Observation 10: During a fully staffed morning shift, nurses took breaks, engaged in positive peer interactions, and displayed uplifted demeanours.

These findings demonstrate how staff shortages at Princess Marina Hospital's ICU critically impact both care delivery and nurse well-being. Through triangulation of interviews and observations, a clear pattern emerged: delayed care, increased stress, and compromised job satisfaction are all interconnected challenges rooted in insufficient staffing. These findings underscore the urgent need for sustainable staffing solutions to safeguard both patient outcomes and workforce health.

DISCUSSION

Socio-demographic characteristics of participants

Interviews with ten ICU nurses at PMH with two among them as males revealed experience ranging from 1–9 years in ICU and 3–24 years in nursing. Most held diplomas, with a few having bachelor's and post-basic critical care qualifications. The limited number of ICU-trained nurses reflects broader trends in low- and middle-income countries,

where general nurses fill ICU roles due to training and resource constraints.^{9, 11} This contrasts with international standards recommending supernumerary periods and at least half of staff with post-registration ICU training.⁵

Despite varying qualifications, all participants reported similar views on staff shortages: highlighting stress, increased workload, and delayed patient care. This contrasts,²³ who linked higher education to better coping. Male and female nurses shared coping strategies like sick leave, opposing,⁹ who reported gender-based task preferences. The demographic variation enriched the study, underscoring that ICU shortages affect all nurses, though specialized training may improve care outcomes.

Theme 1: Compromised Quality of Patient Care

Staff shortages among nurses at PMH ICU negatively impacted patient care, leading to delays, reduced monitoring, and increased error risks.^{12, 24} According to WHO, quality care must be timely and effective, which was not achieved in this setting.

Delayed responses to patient needs

Staff shortages led to prioritization of critical cases, delaying care for others. Interview and observational data confirmed frequent unmet patient needs and unattended alarms. These findings match,^{12, 25} who observed that insufficient staffing leads to delayed recognition of patient deterioration.

Reduced patient monitoring

Participants expressed inability to maintain close surveillance due to high patient loads. Observations showed extended gaps between checks and unattended distress signs. These findings resonate with international studies examining problems associated with nursing staff shortages which discovered that, problems with patient supervision are one of the incidents associated with staffing shortages.⁸

Increased risk of errors

Time pressure forced nurses to rush tasks, increasing error likelihood. Observations included incomplete documentation and skipped safety checks during handovers. Similar studies have also observed 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.^{26, 27, 28}

Theme 2: Physical and psychological turmoil on critical care nurses due to staff shortages

The study findings revealed that nurses experienced significant physical and psychological stress due to staff shortages. The workload led to fatigue, stress, and low job satisfaction.

Increased workload and physical fatigue

Nurses described profound physical fatigue stemming from extended shifts and high patient loads. This was substantiated by observations of nurses skipping breaks and displaying signs of exhaustion. Such physical tolls can impair cognitive performance and increase the likelihood of burnout.^{18, 19, 27}

Psychological Stress

Emotional strain was equally pronounced, with participants articulating feelings of burnout, anxiety, and helplessness. While not overtly observable, the emotional toll was evidenced through rushed and disengaged interactions. The psychological stress described supports literature emphasizing that high-stress ICU environments, compounded by staff shortages, contribute significantly to mental health issues among nurses.^{28, 29}

Reduced job satisfaction

Job dissatisfaction was reported because of the inability to provide quality care. Observations noted disengaged behaviours and verbal expressions of disillusionment. Reduced job satisfaction not only

threatens staff retention but also further exacerbates the staffing crisis, creating a feedback loop detrimental to care delivery.^{30, 31}

Theme 3: Ineffective coping strategies among ICU nurses due to staff shortages

The study identified several ineffective coping mechanisms, such as abuse of sick leave, over-reliance on overtime, and minimal use of support systems. These responses reflect maladaptive reactions to chronic stress. International studies report similar findings on maladaptive coping due to high workload.^{17, 32}

Over-reliance on overtime

The reliance on overtime as a coping mechanism was widespread. While it temporarily alleviated staffing gaps, it contributed to ongoing fatigue and reduced recovery time. Data from the interviews confirmed these patterns, echoing studies that warn of the unsustainability of frequent overtime as a solution to chronic understaffing.^{32, 33, 34}

Abuse of sick leave

Strategic use of sick leave as a form of self-care was discussed but not directly observed. However, patterns of frequent absenteeism suggest it is a common, albeit hidden, strategy. This behaviour reflects the unsustainable pressures nurses face and highlights the unintended organizational consequences of neglecting staff well-being.^{35, 36}

Minimal use of support systems

Despite the availability of counselling and support programs, nurses rarely engaged with them, often citing time constraints or cultural stigma. Interview data pointed to an absence of structured debriefings or peer support. Limited use of support systems differed from developed countries where such systems are robust and utilized.^{12, 28, 37, 38, 39} This underutilization of support systems may perpetuate stress and isolation, underscoring the need for targeted interventions to normalize help-seeking behaviours.

Theme 4: Role of adequate staffing in patient care

Adequate nurse staffing is a cornerstone of safe, high-quality care in intensive care units (ICUs), particularly in resource-limited settings.^{24,29,32,33,39,40} In this study, participants consistently emphasized the critical role that staffing levels play in shaping both patient outcomes and nurse experiences. The data revealed a clear link between sufficient staffing and improvements in care delivery, patient monitoring, and emotional well-being of nursing staff. This theme underscores how staffing is not merely an operational issue but a central determinant of clinical effectiveness and workforce sustainability in the ICU. It aligns with a growing body of global evidence that identifies adequate nurse-to-patient ratios as essential for reducing adverse events, enhancing recovery, and promoting a supportive working environment.^{18, 41, 42, 43}

Improved patient outcomes

Participants emphasized that adequate staffing allowed for timely, personalized, and proactive care, which directly improved patient outcomes. Observations and interviews supported these claims with examples of more attentive care and reduced delays. This theme strongly supports existing evidence that better staffing ratios are associated with lower mortality and complication rates in ICU settings.^{1,3,18,21,22}

Enhanced nurse well-being

The findings also reveal that adequate staffing contributes to improved nurse morale and reduced fatigue. Observational data noted more frequent breaks, positive demeanours, and teamwork during well-staffed shifts. This bidirectional relationship between staffing levels and nurse well-being highlights the importance of workforce planning as a strategy not just for better care, but for sustaining a healthy work environment.^{46, 47, 48, 49}

LIMITATIONS OF THE STUDY

The study focused on PMH ICU and the critical care nurses working there, which may limit the ability to apply the findings to other settings or populations of critical care nurses. To mitigate this, the researcher provided a detailed description of the study context, including the characteristics of the nurses and the ICU setting involved. Additionally, comparing findings with existing literature during discussion helps strengthen the transferability of the results. Triangulation of data from interviews and observations to provide a more comprehensive view of the situation also promotes transferability. The researcher has also incorporated the concept of maximum variation sampling where all ICU nurses from different shifts and varying levels of experience from 6 months onwards were included in the study.

CONCLUSION

The study highlights nurses' perceptions of ICU staff shortages at PMH, Gaborone, revealing negative impacts on patient care and nurse well-being. Key issues include compromised quality of patient care, physical and psychological impact on the nurses, ineffective coping strategies, and the role of adequate staffing in patient care. Nurses emphasized that adequate staffing is essential for delivering optimal care. The findings call for collaborative efforts by government, healthcare institutions, and nurse managers to address staffing gaps and enhance patient safety and nurse welfare in ICUs. These insights are particularly critical for health system planners and policymakers in low-resource settings, where strategic workforce planning and targeted resource allocation are essential to sustaining safe and effective critical care services.

What is already known on this topic

- Σ Staff shortages in ICUs are a global concern, especially in low- and middle-income countries, where limited resources and trained personnel often lead to nurse-to-

patient ratios that fall below international recommendations.

What this study adds

- Σ The study reveals the limitations and ineffectiveness of current coping strategies used by nurses, underlining the urgent need for systemic interventions rather than reliance on individual resilience.
- Σ The study emphasizes the importance of adequate staffing not only for patient safety but also for nurse retention and mental well-being, offering practical implications for health policy and workforce planning in similar healthcare contexts

ACKNOWLEDGEMENTS

I extend heartfelt thanks to my supervisors, Dr. Ruth Wahila and Mrs. Phadaless P. Sinkamba, for their invaluable guidance and support. Gratitude to the Ministry of Health Botswana for funding this study—its content reflects the author's views, not necessarily those of the National Institutes of Health. Sincere appreciation goes to the Medical Superintendents of Princess Marina Hospital for granting permission to conduct this research, and to the PMH ICU staff for their cooperation and dedication throughout the study.

CONFLICTS OF INTEREST

Authors declare no conflicts of interest.

AUTHOR'S CONTRIBUTIONS

Mothusi Maika – Led the study's conceptualization, design, data collection, transcription, thematic analysis, and interpretation. Drafted and revised the full research report with supervisor feedback.

Dr. Ruth Wahila – Provided expert supervision, helped shape the research focus and methodology, guided data interpretation, and ensured academic rigor and ethical compliance.

Mrs. Phadaless P. Sinkamba – Offered critical feedback and revisions, enhancing the intellectual quality, clarity, and coherence of the research.

REFERENCES

1. Kayambankadzanja RK, Schell CO, Wärnberg MG, Tamras T, Mollazadegan H, Holmberg M, et al. Towards definitions of critical illness and critical care using concept analysis. *BMJ Open*. 2022 Sep 1;12(9):e060972.
2. Henriksen KF, Hansen BS, Wøien H, Tønnessen S. The core qualities and competencies of the intensive and critical care nurse: a meta-ethnography. *J Adv Nurs*. 2021 Dec;77(12):4693–710.
3. Sole ML, Klein DG, Moseley MJ. Introduction to critical care nursing e-book. 8th ed. St. Louis: Elsevier Health Sciences; 2020 Jul 4.
4. Bray K, Wren I, Baldwin A, St Ledger U, Gibson V, Goodman S, et al. Standards for nurse staffing in critical care units determined by: the British Association of Critical Care Nurses, the Critical Care Networks National Nurse Leads, Royal College of Nursing Critical Care and In-Flight Forum. *Nurs Crit Care*. 2010 May;15(3):109–11.
5. Harrington J, Hannah D, Jeon J, Tsang K, Roberts L, Pirani T. Intensive Care Society State of the Art (SOA) 2022 abstracts. *J Intensive Care Soc*. 2023;24(1):1–117.
6. Atumanya P, Sendagire C, Wabule A, Mukisa J, Ssemogerere L, Kwizera A, et al. Assessment of the current capacity of intensive care units in Uganda: a descriptive study. *J Crit Care*. 2020 Feb 1;55:95–9.
7. Imam A, Obiesie S, Aluvaala J, Maina JM, Gathara D, English M. Identifying gaps in global evidence for nurse staffing and patient care outcomes research in low/middle-income countries: an umbrella review. *BMJ Open*. 2022 Oct 1;12(10):e064050.

8. Nakweenda M, Anthonie R, van der Heever M. Staff shortages in critical care units: critical care nurses' experiences. *Int J Afr Nurs Sci*. 2022 Jan 1; 17:100412.
9. Mamalelala TT, Dithole KS, Maripe-Perera DB. Nurses and emergency nursing care in Botswana. *Afr J Emerg Med*. 2023 Mar 17;13(2):68.
10. Spencer SA, Adipa FE, Baker T, Crawford AM, Dark P, Dula D, et al. A health systems approach to critical care delivery in low-resource settings: a narrative review. *Intensive Care Med*. 2023 Jul;49(7):772–84.
11. Molebatsi K, Milan AO, Cox M. Results from the first audit of an intensive care unit in Botswana. *South Afr J Crit Care*. 2020 Jul 1;36(1):23–7.
12. Rae PJ, Pearce S, Greaves PJ, Dall'Ora C, Griffiths P, Endacott R. Outcomes sensitive to critical care nurse staffing levels: a systematic review. *Intensive Crit Care Nurs*. 2021 Dec 1;67:103110.
13. Carter C, Mukonka PS, Sitwala LJ, Howard-Hunt B, Nottter J. The development of critical care nursing education in Zambia. *Br J Nurs*. 2020 May 14;29(9):499–505.
14. Rhéaume A, Breau M. Antecedents of burnout and turnover intentions during the COVID-19 pandemic in critical care nurses: a mediation study. *Can J Crit Care Nurs*. 2022 Dec 1;33(3).
15. Tamata AT, Mohammadnezhad M. A systematic review study on the factors affecting shortage of nursing workforce in the hospitals. *Nurs Open*. 2023 Mar;10(3):1247–57.
16. Dall'Ora C, Ejebu OZ, Ball J, Griffiths P. Shift work characteristics and burnout among nurses: cross-sectional survey. *Occup Med (Lond)*. 2023 May 1;73(4):199–204.
17. Dall'Ora C, Ball J, Reinius M, Griffiths P. Burnout in nursing: a theoretical review. *Hum Resour Health*. 2020 Dec;18:1–7.
18. Almenyan AA, Albuduh A, Al-Abbas F. Effect of nursing workload in intensive care units. *Cureus*. 2021 Jan 13;13(1):e12696.
19. Banda Z, Simbota M, Mula C. Nurses' perceptions on the effects of high nursing workload on patient care in an intensive care unit of a referral hospital in Malawi: a qualitative study. *BMC Nurs*. 2022 Jun 1;21(1):136.
20. Tasci AD, Wei W, Milman A. Uses and misuses of the case study method. *Ann Tour Res*. 2020 Jul 28;82(4):102815.
21. Kiger ME, Varpio L. Thematic analysis of qualitative data: AMEE Guide No. 131. *Med Teach*. 2020 Aug 2;42(8):846–54.
22. Enworo OC. Application of Guba and Lincoln's parallel criteria to assess trustworthiness of qualitative research on indigenous social protection systems. *Qual Res J*. 2023 Jun 12;23(4):372–84.
23. Iwanowicz-Palus G, Mróz M, Kowalczyk K, Szlendak B, Bień A, Cybulski M. Nurses coping with stressful situations—a cross-sectional study. *Int J Environ Res Public Health*. 2022 Sep 1;19(17):10924.
24. Bae SH. Intensive care nurse staffing and nurse outcomes: a systematic review. *Nurs Crit Care*. 2021 Nov;26(6):457–66.
25. Ross J. Nursing shortage creating patient safety concerns. *J Perianesth Nurs*. 2022 Aug 1;37(4):565–7.
26. Naseem S, Naseem S, Amir Z. Effect of staff shortage on patient safety and quality of care. *Ann Hum Soc Sci*. 2024 Nov 6;5(4):158–64.
27. Pereira Lima Silva R, Gonçalves Meneguetti M, Dias Castilho Siqueira L, de Araujo TR, Auxiliadora-Martins M, Mantovani Silva Andrade L, Laus AM. Omission of nursing care, professional practice environment and workload in intensive care units. *J Nurs Manag*. 2020 Nov;28(8):1986–96.
28. Betsiou S, Pitsiou G, Panagiotidou E, Sarridou D, Kioumis I, Boutou AK. Nursing errors in intensive care unit and their association with burnout, anxiety, insomnia and working environment: a cross-sectional study. *Hippokratia*. 2022 Jul;26(3):110.

29. Al Ma'mari Q, Sharour LA, Al Omari O. Fatigue, burnout, work environment, workload and perceived patient safety culture among critical care nurses. *Br J Nurs*. 2020 Jan 9;29(1):28–34.
30. Endacott R, Pattison N, Dall'Ora C, Griffiths P, Richardson A, Pearce S, SEISMIC Study Team. The organisation of nurse staffing in intensive care units: a qualitative study. *J Nurs Manag*. 2022 Jul;30(5):1283–94.
31. Hegarty H, Knight T, Atkin C, Kelly T, Subbe C, Lasserson D, et al. Nurse staffing levels within acute care: results of a National Day of Care survey. *BMC Health Serv Res*. 2022 Apr 13;22(1):493.
32. Hellín Gil MF, Ruiz Hernández JA, Ibáñez-López FJ, Seva Llor AM, Roldán Valcárcel MD, Mikla M, et al. Relationship between job satisfaction and workload of nurses in adult inpatient units. *Int J Environ Res Public Health*. 2022 Sep 16;19(18):11701.
33. Quesada-Puga C, Izquierdo-Espin FJ, Membrive-Jiménez MJ, Aguayo-Estremera R, Cañadas-De La Fuente GA, Romero-Béjar JL, Gómez-Urquiza JL. Job satisfaction and burnout syndrome among intensive-care unit nurses: a systematic review and meta-analysis. *Intensive Crit Care Nurs*. 2024 Jun 1;82:103660.
34. Cichoń J, Płaszewska-Żywko L, Kózka M. Emotional intelligence and coping strategies among intensive care unit nurses. *Nurs Crit Care*. 2023 Mar;28(2):322–8.
35. Bae SH. Nurse staffing, work hours, mandatory overtime, and turnover in acute care hospitals affect nurse job satisfaction, intent to leave, and burnout: a cross-sectional study. *Int J Public Health*. 2024 Apr 30;69:1607068.
36. Scott-Marshall HK. Safe limits on work hours for the nursing profession: a rapid evidence review. *Front Glob Womens Health*. 2024 Oct 31;5:1455422.
37. Xie T, He W, Jiu Z, Li Q, Huang C, Liu J, et al. Overwork among ICU nurses: identification of risk factors. *J Nurs Adm*. 2023 May 1;53(5):271–6.
38. Sridharan V, Leung KC, Peisah C. Understanding aggression displayed by patients and families towards intensive care staff: a systematic review. *J Intensive Care Soc*. 2024 Aug;25(3):266–78.
39. Romero-García M, Delgado-Hito P, Gálvez-Herrer M, Ángel-Sesmero JA, Velasco-Sanz TR, Benito-Aracil L, et al. Moral distress, emotional impact and coping in intensive care unit staff during the outbreak of COVID-19. *Intensive Crit Care Nurs*. 2022 Jun 1;70:103206.
40. Bagwell GA, Cesario SK, Fraser D, Kenner C, Walker K. Breaking the cycle of nursing chaos: the need to address the nursing shortage. *J Neonatal Nurs*. 2024 Feb 1;30(1):2–4.
41. Shen X, Zou X, Zhong X, Yan J, Li L. Psychological stress of ICU nurses in the time of COVID-19. *Crit Care*. 2020 Dec;24:1–3.
42. Bautista CL, Bourassa KA, Vasquez NN, Desrochers M, Bartek N, Madan A. Nursing staff in a large hospital system underutilize insurance-based mental health services. *InHealthcare*. 2024 Jun 13;12(12):1188.
43. Ahmat A, Millogo JJ, Illou MM, Maritza T, Bamogo F, Okoroafor SC, Nyoni J, Asamani JA. Workloads and activity standards for integrated health service delivery: insights from 12 countries in the WHO African region. *BMJ Global Health*. 2022 May 1;7(Suppl 1):e008456.
44. Peng X, Ye Y, Ding X, Chandrasekaran A. The impact of nurse staffing on turnover and quality: An empirical examination of nursing care within hospital units. *J Oper Manag*. 2023 Oct;69(7):1124–52.
45. Lasater KB, Sloane DM, McHugh MD, Cimiotti JP, Riman KA, Martin B, et al. Evaluation of hospital nurse-to-patient staffing ratios and sepsis bundles on patient outcomes. *Am J Infect Control*. 2021 Jul 1;49(7):868–73.
46. Margadant C, Wortel S, Hoogendoorn M, Bosman R, Spijkstra JJ, Brinkman S, de Keizer N. The nursing activities score per nurse ratio is associated with in-hospital mortality, whereas

- the patients per nurse ratio is not. *Crit Care Med.* 2020 Jan 1;48(1):3–9.
47. Scruth E. Nursing activities score, nurse patient ratios, and ICU mortality: it's more complicated than that. *Crit Care Med.* 2020 Jan 1;48(1):126–7.
48. Yoon HJ. The effect of nurse staffing on patient outcomes in acute care hospitals in Korea. *Int J Environ Res Public Health.* 2022 Nov 23;19(23):15566.
49. Rodriguez-Ruiz E, van Mol MM, Latour JM, Fuest K. Caring to care: Nurturing ICU healthcare professionals' wellbeing for enhanced patient safety. *Med Intensiva* (Engl Ed). 2025 Apr 1;49(4):216–23.
50. Wynne R, Davidson PM, Duffield C, Jackson D, Ferguson C. Workforce management and patient outcomes in the intensive care unit during the COVID-19 pandemic and beyond: A discursive paper. *J Clin Nurs.* 2021 Apr.
51. Jalal A, Iwamoto K, Gedik G, Ravaghi H, Kodama C. Health workforce capacity of intensive care units in the Eastern Mediterranean Region. *PLoS One.* 2023 Jun 16;18(6):e0286980.
52. Lilly CM, Oropello JM, Pastores SM, Coopersmith CM, Khan RA, Sessler CN, et al. Workforce, workload, and burnout in critical care organizations: survey results and research agenda. *Crit Care Med.* 2020 Nov 1;48(11):1565–71.