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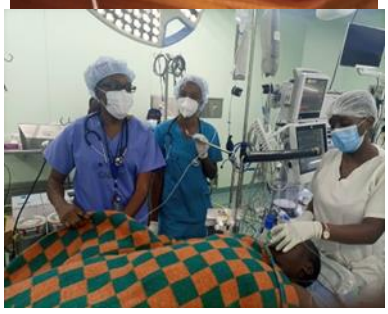

Centre for International Health Partnerships

School of Nursing & Midwifery

Birmingham City University

About the International Perspectives in Emergency, Trauma and Critical Care Nursing Journal

The International Perspectives in Emergency, Trauma and Critical Care Nursing is the journal for students completing the Birmingham City University Professional Practice Adult Critical Care and Cardiac Care programmes and is published in collaboration with the Critical Care Nurses Association of Zambia (CCNAZ). The journal is managed by the BCU HELS Centre of International Health Partnerships and on completion of the education programmes, CCNAZ have agreed to continue the journal using it as a vehicle to promote emergency, trauma and critical care nursing across Zambia and the wider central Africa region. The journal spans the whole continuum of acute and critical care nursing and includes all aspects of adult, paediatric and neonatal critical care nursing including surgery, medicine, cardiac, renal, neurosciences and rehabilitation.

This peer reviewed international journal provides a platform for emergency, trauma and critical care nurses across our partnership to share nursing practice, research, education, or management relating to emergency, trauma and critical care nursing. This will support and facilitate opportunities for nurses to learn publication skills, to enable them to share and disseminate best practice. The ethos of the journal is the promotion of quality and excellence of care for acute and critically ill patients. The journal will be published twice yearly and will be open access. The journal is registered with an International Standard Serial Number (ISSN) reference number: 2976-9523. For more information please email: CIHP@bcu.ac.uk

Call for Papers: Special Edition: Cardiovascular Nursing

Cardiovascular diseases are among the leading causes of death worldwide, accounting for more than 80% of all premature non communicable disease (NCD) deaths. Over the past two decades the incidence of NCDs in sub-Saharan Africa have rapidly increased due to cardiovascular risk factors i.e., unhealthy diet, increased urbanisation, reduced physical activity, hypertension, rising obesity, diabetes dyslipidaemia and air pollution (Gouda et al., 2019). In addition, as the World Health Organization (2015) pointed out over a decade ago, many countries are also saddled with high numbers of human immunodeficiency virus (HIV) which predisposes the risk of NCDs such as cardiovascular diseases, diabetes, and cancer, as a side effect of HIV infection or treatment. As Zilla et al (2020) point out, cardiac surgery in many high-income countries (HIC) has started to contract as a surgical speciality due to the move towards joint cardiac intervention. Therefore, cardiac nursing in Zambia and the wider region is at cross-roads as they rapidly develop cardiac services, with reducing access to international specialists.

International Perspectives in Emergency, Trauma and Critical Care would like to invite the submission of papers to contribute to a special issue focused on cardiac nursing including prevention, acute and rehabilitative phases of the patient pathway. Papers reporting primary research, literature reviews, case studies, quality improvement and critical commentaries related to neonatal, paediatric and adult cardiac nursing are welcome. If you are interested in contributing but would like support, the journal does offer a mentorship / buddy scheme where you can work with an experienced author.

Papers should follow the author guidelines (page 30) and be submitted via email to CIHP@bcu.ac.uk with the subject title *'Special Edition: Cardiac Nursing'.*

References:

Gouda HN., Charlson F., Sorsdahl K., et al., (2019). Burden of non-communicable diseases in sub-Saharan Africa, 1990–2017: results from the Global Burden of Disease Study. *Lancet Global Health*. 7:e1375-e1387

World Health Organization. (2015). Cardiovascular diseases. https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds)

Zilla P., Yacoub M., Zühlke L., et al. (2018). Global unmet needs in cardiac surgery. *Glob. Heart.* 13(4):293–303. https://doi.org/10.1016/j.gheart.2018.08.002

Contents

Recovery from critical illness does not end at discharge… it is very often just the beginning of a long journey

This edition is dedicated to rehabilitation following critical illness, while our initial focus has been on capacity strengthening emergency, trauma and critical care, completing the patient pathway with rehabilitation strategies has been an ongoing aspiration for both of us. We have seen that many ICU survivors are often hidden in plain sight and with increasing numbers of patients surviving their critical care admission, individuals and families are silently carrying the burden, which is often described as a fairy tale without a happy ending. We have made it a deliberate policy to actively work with the Ministry of Health and the Critical Care Nurses Association of Zambia (CCNAZ) to increase awareness of critical care rehabilitation for the past two years. This year, the CCNAZ conference focused on Critical Care Without Walls: From Emergency Department to Rehabilitation, and we were thrilled by the presence of the Honourable Minister of Health, Dr Elijah J. Muchima, MP, the Permanent Secretary (Technical Services) Dr Kennedy Lishimpi and the Director of Nursing Mrs Daphne Shamambo, which provided an opportunity to showcase the work that has been carried out by Critical Care Nurses to support rehabilitation. In addition, our research study in collaboration with CCNAZ to follow up ICU survivors has led to a team working on a rehabilitation toolkit for critical care nurses and the infographic on page 6 summaries the preliminary findings.

This special edition on rehabilitation, starts with a critical review of delirium, a common yet often missed condition in patients both in ICU and following discharge. Our second article critically discusses and challenges practices around enteral nutrition and highlights the importance of naso-gastric tube safety. This is followed by a critical review of the use of patient diaries, which offers practical considerations for intensive care units in Zambia. The final paper presents a case study of a patient discharged from ICU and critically examines the realities and opportunities for improving community care and reducing the impact on both individuals and families.

While these successes have shown the power of professional discussions from strategic level to bedside, there is still so much work to be done. You may have had the opportunity to attend the CCNAZ conference where we were lucky enough to be supported by a UK charity #RehabLegend which recognises anyone who has done anything to enhance, support or facilitate rehabilitation. As part of this conference, we asked participants to consider one thing they could do to improve rehabilitation in their own unit. After you have read this edition, we would ask you to take five minutes to think have you done it and then consider what else could I do to improve rehabilitation opportunities and join us to become #RehabLegends!

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Rehabilitation following Critical Illness in Zambia

Aim

To evaluate the experiences of discharged intensive care patients thereby increasing understanding of their recovery and rehabilitation needs at one terfiary referral hospital in Zambia.

Findings

10 aduit patients who were discharged from a tertiary referral hospital in Zambia were interviewed.
Key themes identified included perception of critical care.
access to healthcare, impact on individuals and families, ward-based care,
and patient follow-up.

Next Steps

An international multi-disciplinary team are currently developing a toolkit for Critical Care Nurses to support patients once discharged from critical care.

Implications for Practice

With increasing access to critical care services in many LMICs, this means higher numbers of patients are more likely to survive to hospital discharge.
This one of the first studies in this field o explore patients' perceptions and experiences

Delirium in Adult Patients Admitted to Intensive Care

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ABSTRACT

Background: Delirium is a neuropsychiatric disorder marked by fluctuating disturbances in consciousness, attention and cognition. It is often associated with prolonged hospitalisation, functional decline and increased mortality. While its burden is well documented globally, delirium remains under-diagnosed in Zambia, where routine screening is uncommon and no culturally validated tools exit.

Aim: This review critically examines the pathophysiology of delirium, evaluates pharmacological and non-pharmacological interventions and explores the psychological and ethical implications for patients, families and healthcare staff in Zambian context.

Methods: A critical review of literature published in the last decade was undertaken using academic databases. Evidence was appraised to identify effective management strategies and highlight contextual gaps in delirium care in Zambia.

Results: Findings demonstrate that hypoactive delirium is the most common subtype yet remains poorly recognised in clinical practice. While the CAM-ICU tool shows high diagnostic accuracy, its use in Zambia is limited by staff training deficits, cultural barriers and lack of policy integration. Pharmacological Interventions, such as haloperidol and dexmedetomidine, show inconsistent benefits, with limited applicability in low-resources systems. In contrast, non-pharmacological strategies, including reorientation, mobilisation and sensory optimisation, consistently improve outcomes but are inconsistently applied. Psychological impacts extend beyond patients to families and staff, contributing to caregiver distress, nurse burnout and ethical dilemmas around autonomy and restraint use.

Conclusion: Delirium management in Zambia is constrained by absent policy frameworks, limited training and reliance on evidence from high-income contexts. Addressing these gaps requires development of culturally sensitive screening tools, integration of delirium protocols into national guidelines and investment in nurse-led based care.

Keywords: Delirium, intensive care, Zambia, Nursing, pharmacological and non-pharmacological interventions, Ethical dilemmas and Policy gaps.

This paper critically examines the pathophysiology of delirium, evaluating both the pharmacological and non-pharmacological interventions and exploring the psychological impact on the patients, families and healthcare staff in Zambia. Delirium is an acute cognitive disturbance that occurs alongside a physical illness, characterised by significant and fluctuating alterations in consciousness and cognitive function (Banerdt et al., 2021). Key clinical features include memory impairment, disorientation, perceptual anomalies and difficulties with attention (Mortensen et al., 2020). Delirium can be categorised into three main types, each presenting with distinct clinical features. Hyperactive delirium is characterised by heightened psychomotor activity, including restlessness and agitation (Rengel et al., 2021). In contrast, hypoactive delirium is subtle and insidious, manifesting as lethargy, drowsiness, diminished responsiveness and decreased motor activity. Moreover, Patients often appear disengaged and usually associated with depression making recognition and management challenging (Hosker & Ward 2017; Jackson et al., 2025). Mixed-type delirium exhibits fluctuating features of both hyperactive and hypoactive subtypes, with patients alternating between states of agitation reduced responsiveness (Bradford et al., 2023), with the most prevalent form of delirium being hypoactive delirium (Boland et al., 2019).

Multiple factors contribute to the onset of delirium, including medical illness, substance use or withdraw, physical trauma such as head injury and primary neurological disorders like cerebral events (Wilson et al., 2022). However, in the Zambian context, the degree of illness a, prior stroke and emotional trauma such as being divorced or widowed, have been identified as independent predictors of delirium in hospitalised patients (Banerdt et al., 2021). The association with marital status underscores a dimension of social vulnerability which may reflect reduced social support, increased psychosocial stress or related burdens. Further, these variables continue to be significant predictors even after adjustment for relevant factors such as HIV status,

socio economic conditions and sedative use. This highlights the interplay between clinical and social determinants in the development of delirium in the Zambian context.

Awareness of these risk factors helps nurses recognise delirium early, monitor at risk patients and implement timely interventions such as cognitive assessments, supportive care and collaboration with the multidisciplinary team thereby improving treatment outcomes and quality of care. According to Banerdt et al (2021), the prevalence of delirium among hospitalised surgical and medical patients in Zambia was 48.5%. Despite its high prevalence and significant impact on patient outcomes, routine screening for delirium is not commonly practiced in many healthcare settings across the country. The same study emphasised that delirium duration independently influenced six-month mortality and disability outcomes, highlighting the importance of early detection and management. However, it also demonstrated that delirium is generally omitted from standard daily patient assessments in Sub-Saharan Africa (SSA), including Zambia, revealing a significant diagnostic gap. This may be attributed to the reliance on psychiatric consultations for delirium screening, an approach that often results in delays in diagnosis and treatment (Bradford et al., 2023). Moreover, the study also highlights that psychiatric evaluations are not consistently integrated within routine medical care. In contrast, a study by the Geriatric Medicine Research Collaborative (GMRC) (2022) showed that routine targeted quality improvement interventions in United Kingdom have led to an increase in delirium screening, recognition and management of delirium in the elderly.

Given the evidence linking the lack of routine delirium screening and delayed diagnosis or intervention to increased morbidity and prolonged hospitalisation. It is important for Zambian (ICUs) to adopt systematic screening protocols such as the Confusion Assessment Method for the ICU (CAM-ICU), which enable nurses without specialist psychiatric training to accurately identify delirium and facilitate early interventions to improve patient outcomes (Miranda et al., 2023). However, according to George et al (2022), cognitive assessment tools developed for high income countries (HICs) may not be suitable for use in low-income countries (LICs) such as Zambia, and this may be due to significant cultural and educational disparities. Additionally, delirium-specific measures have not been systematically validated in this context, raising concerns about their applicability and accuracy in detecting delirium. These findings emphasis the need for increased awareness and targeted interventions to understand the burden of delirium and inform appropriate management of delirium in SSA including Zambia.

The prevalence of delirium among ICU patients varies across studies is influenced by demographics and illness severity including diagnostic criteria. A meta-analysis by Wu et al (2023) reported an incidence of delirium in ICU patients of 31 per 1000, with a prevalence of 31% in China. In contrast, du Plooy's et al's 2020 SSA study found a higher prevalence with at least 1 in 8 patients exhibiting delirium, particularly among relatively young medical patients. This contrasts with the findings of Fuchs et al (2020), whose study indicated that delirium is more common in the elderly, with the highest incidence observed in ICUs, were 83.3% of ICU patients experience delirium. Further, the inherently fluctuation presentation of delirium, combined with the absence of systematic and routine assessments in ICU results in many cases being missing with estimates suggesting that 30-75% of incidents go undetected (Sadaf et al., (2023). Therefore, the occurrence of delirium acquired in the ICU is significant and demonstrates considerable variation across specific patient subgroups. Notably, the highest reported incidence reaches up to 80% among patients receiving mechanical ventilation (Boerma et al., 2019).

In addition, although data on the prevalence of delirium in SSA are limited, information from studies conducted more than 5 years ago were utilized. A multicentre observational study conducted in Uganda reported that 51% of mechanically ventilated ICU patients experienced delirium with history of mental illness, anaemia, sedation, endotracheal tube (ETT) use and respiratory acidosis identified as significant predictors (Kwizera et al.,2015). The findings highlight the need for increased awareness and targeted interventions to address the burden of delirium and guide appropriate management strategies in SSA. Early and accurate diagnosis of delirium is fundamental for its effective management; thus, comprehensive and intervention screening is advocated for all critically ill patents (Seron et al.,2023). All patients admitted to the ICU are regarded as at high risk of developing delirium and the best practice guidelines recommend they undergo regular assessments for delirium, ideally once per shift (Miranda et al., 2023).

The CAM-ICU has been validated as a reliable diagnostic tool, demonstrating a sensitivity of 80% and a specificity of 96% in mechanically ventilated patients (Ely et al., 2001; Spiegelberg et al., 2020). However. Paddick et al (2018) study demonstrated that while the CAM-ICU tool may be more effective in HICs, in SSA, there remains urgent need to develop simplified, culturally sensitive screening tools which enable timely detection, intervention and ultimately improved outcomes in resource limited systems. To fully realise the

benefits of the CAM-ICU tool in LICs, it is important that healthcare providers understand its correct application. Baluku-Murungi et al (2023) Ugandan study, provides valuable insights into improving delirium detection and management, which can be directly applied to Zambia's healthcare system. The study demonstrated that targeted educational interventions significantly enhance nurses' knowledge and clinical practice regarding delirium assessment. In Zambia, where delirium is often under recognized and routine screening is not common, a similar educational approach could bridge this gap. By training nurses to recognize the symptoms, causes and appropriate use of delirium tools like the CAM-ICU could improve early detection and management of delirium (Hebeshy et al., 2025). Moreover, continuous professional development programs, integrating delirium education into nursing curricular by the Nursing and Midwifery Council of Zambia (NMCZ) could ensure sustainable improvements in the long term. Further, effective utilisation of the CAM-ICU requires prior assessment of the patient's level of sedation using the Richmond Agitation-Sedation Scale (RASS) (van den Boogaard et al., 2020). Sedation depth directly influences delirium recognition, and therefore assessment should be limited to patients with a RAAS between -3 and 0 to maintain clinical validity. Moreover, conducting a RAAS assessment first ensures that patient is sufficiently arousable to engage in CAM-ICU testing, thereby minimising false negatively caused by deep sedation (-4 or -5). Additionally, while applying the tool, nurses must assess key indicators such as acute changes in mental state, inattention, disorganised thinking, and altered levels of consciousness. A diagnosis of delirium is made if made if three of these features are present.

The management of delirium in ICUs involves both pharmacological and non-pharmacological interventions. Burry et al (2019) suggest that alpha-2 adrenergic agonist dexmedetomidine hydrochloride may reduce the duration of delirium in critically ill patients including increased ventilator free hours and shorten ICU stay. Similarly, Keith et al (2025) found potential benefits of dexmedetomidine in reducing post operative delirium in adult cardiac surgical patients but evidence was of low certainty and further trials are needed. Further, haloperidol a first-generation antipsychotic, when used prophylactically appears to have potential in reducing in incidence of delirium among adult surgical patients (Shen et al., 2018). However, the study also highlights that due to limited evidence, further large-scale studies are needed to confirm and strengthen these preliminary findings. In the Zambian context, although haloperidol is commonly available and affordable, it is primarily prescribed in psychosis especially in schizophrenia due to its affordability and availability within the healthcare setting.

Non-pharmacological interventions to prevent delirium appear to be effective across a variety of hospital settings with evidence suggesting that they can reduce the incidence of delirium by approximately 43% (Burton et al., 2021). In addition, Tonna et al (2021) demonstrated that a non-pharmacological management was associated with lower occurrence of delirium. While the effective management of delirium involves a collaborative approach, nurses contribute significantly to the management of delirium through evidence based non-pharmacological interventions (Fernandes et al., 2024). The same study also highlights that, nurse's continuous patient interactions and engagement places them in an optimal position to implement non-pharmacological interventions. However, Boland et al (2019) highlight that despite proven benefits of non-pharmacological interventions in general hospital settings, the evidence base for their effectiveness in palliative care or terminal illness remains uncertain. This emphasises the need for targeted research to guide practice in these sensitive contexts.

Non-pharmacological strategies are generally preferred to pharmacological treatments, as they are considered safer and have good outcomes (Kim et al., 2021). These include addressing modifiable risk factors such as correcting sensory impairments, promoting mobilisation, regulating the sleep-wake cycle and reinforcing orientation (Mart et al., 2021). The same study further highlights that these factors have been progressively integrated into the evolving ABCDEF bundle to support better delirium recognition and management in ICUs. Consequently, these interventions reduce cognitive disorientation and facilitate mental engagement, minimising room changes and encouraging structured routines further support cognitive stability (Boland et al., 2019). In contrast, Johnson et al (2024) found that these interventions for delirium management in adult ICU settings are highly varied and inconsistently applied, often lacking a strong evidence base. Further, the study suggests that development of flexible evidence based, and standardised interventions that involve both the nurses and family members improves outcomes, reducing use of medication.

Active involvement of family members in patient care is recommended, as it provides emotional support and aids family members in coping with the patient's condition (Vitorino et al., 2025). However, ICU is often highly distressing for family caregivers due to uncertainty about the patient's condition, limited communication and emotional strain, with 40-80 % experiencing significant anxiety (Barth et al., 2016; Rosgen et al., 2021).

Moreover, according to Azimzadeh et al (2023) study suggests that families maybe more likely to participate in management of delirium once the patient has achieved haemodynamic stability because care givers often face barriers such as lack of awareness and understanding of delirium, inadequate education and insufficient communication with medical staff (Lange et al., 2022). Addressing these issues is crucial to alleviate caregiver distress and improve the quality of care for patients experiencing delirium. Again, so what and why are these points important. Nonetheless, Mailhot et al (2022) study demonstrated that there is limited research addressing how families can be involved in the non-pharmacological management of delirium in ICU settings and specific resources required to support their involvement, Therefore, the development of targeted evidence -based nursing interventions are essential to empower and support families.

In Zambia, addressing these issues requires the development of evidence-based nursing interventions tailored to the local context. Such interventions should focus on educating family caregivers about delirium, communication between the critical care team and families as well as actively involving family members in the care team. Empowering families in this way can improve the quality of care for patients with delirium, reduce care giver distress and ultimately lead to better patient outcomes. Delirium can have profound psychological effects not only for the affected patients but also for their families and healthcare professionals involved in their care. Li et al (2020) indicated that patients experiencing delirium frequently exhibit disorientation regarding time, place and current events. They may endure intensely distressing episodes including vivid and often frightening hallucinations which are more common in patients admitted to the ICU due to its intense lighting and noise (la Cour et al., 2024). In addition, these patients can present with heightened agitation and restlessness or conversely marked lethargy and withdrawal. Lange et al (2022) highlighted that patients often report feelings of embarrassment about what occurred while they were delirious, making the remembrance of the experience emotionally challenging. This highlights the necessity for placing greater emphasis on actively engaging both patients and their families in the management while also providing comprehensive information about the lasting effects of delirium (la Cour et al., 2024). The implications of these findings highlight the need for a more holistic, patient-family centred approach to delirium care. Actively involving families and providing clear, empathetic communication can lessen the long-term psychological impact of delirium.

The sudden cognitive and behavioural changes associated with delirium can be traumatic for family care givers especially in palliative care settings. This is exacerbated by concerns about delirium irreversibility, and uncertainty over restoration of the carer-patient relationship (Assa et al., 2021), Further about 15% of care givers report significant psychological distress, often greater than that of patient's or nurses (Ranieri et al., 2017). In addition, patients may have lasting cognitive or physical impairments post-ICU, with 40% experiencing delirium over three months after discharge. This increases caregiver burden and affects family mental health. Caring for these patients is also demanding for ICU nurses, highlighting the need to understand the psychological impact of delirium on staff and support their wellbeing and enhance quality of care (Wang et al., 2022). Further, the study highlights that ICU nurses experience moderate psychological stress when caring for delirious patients due to lack of knowledge, safety concerns, high demands and excessive workload. These factors lead to time and energy strain, hinders effective care, and contribute to emotional burnout as well as physical exhaustion (Jiang et al., 2024). These findings underscore the urgent need for targeted training, adequate staffing and supportive work environments to empower ICU nurses in managing delirium effectively.

Delivering quality health care is an ethical responsibility, guided by the principles of beneficence, promoting good and nonmaleficence -avoiding harm. However, achieving ethical healthcare also requires adherence to the principles of justice and respect for patient autonomy (Marckmann et al., 2022). In the context of delirium, these principles are frequently challenged. The primary ethical concern is obtaining consent from patients experiencing delirium, given their acute onset and fluctuating impaired cognitive function, assessing their capacity to consent is complex. Further, while some patients may retain partial decision-making abilities while others may not, requiring input from the next of kin. This raises questions about respecting patient autonomy and whether decisions align with the patient's values and preferences. A study by Molina-Mula et al (2020) suggests that the vital role of nurses in facilitating patient autonomy is through trust-based relationships. In addition, effective communication, empathy and advocacy allows patients to express their values and actively participate in decision making. Further, nurses must balance ethical responsibilities and clinical judgement, especially when patients cannot speak for themselves. Ultimately, the nursing patient relationship is important to facilitate care decisions align with the patients' preferences and support ethical patient-centered practice.

Another ethical dilemma involves the use of physical restraints which conflicts with the ethical principle of autonomy, as it involves the imposition of limiting a patient's freedom, often without their consent thereby

compromising their ability to make independent decisions regarding their care (Zhou et al., 2024), However, due to compromised cognitive status of most patients in such circumstances, informed consent is usually not sought or obtained. In addition, the application of restraints also contradicts the ethical principles of non-maleficence and beneficence given the limited support, their use remains ethically contentious and potentially harmful (Zhou et al., 2024). In contrast, patients with delirium present with symptoms such as hallucinations, agitation and may engage in disruptive or harmful behaviours including aggression, dislodging medical devices, attempting to leave their beds, throwing objects and inflicting harm on themselves or others (Salehi et al., 2021), Consequently, ICU nurses may resort to the use of physical restraints as a means of patient safety (Zhou et al 2024). In Zambia, the Nurses and Midwife act No. 10 of 2019 and the Nursing Care Standards (2024) mandate that nurses uphold patient dignity, safety and autonomy. Further, nurses are expected to engage in ethical decision-making and maintain the patients right to dignity and privacy. However, the use of physical restraints by ICU nurses is not explicitly prohibited but is subject to strict ethical and legal guidelines that prioritise patient safety, dignity and autonomy highlighting the need for clearly defined restraint protocols that safeguard these principles (Sharifi et al., 2021).

In Zambia, healthcare institutions need to implement policies that align with international ethical and legal standards such that physical restraints are used appropriately and only when necessary to protect patient safety. This is consistent with the NMCZ (2024) emphasis that any restraints must align with ethical standards and be in the best interest of the patient. Further, despite, variations in clinical practice, the prospect of adapting existing guidelines for the management of physical restraints remains a viable and achievable approach, however, it is important to prioritise the prevention of harm when implementing physical restraints on patients (Cui et al., 2022). Nurses frequently encounter ethical dilemmas when considering the use of physical restraints and often experience feelings of helplessness and fear of managing patients with aggressive behaviours. The ethical dilemma arises from the obligation to honour the patients right to autonomy and safety (Zhou et al2024). Understanding and addressing these ethical dilemmas is crucial for nurses to provide compassionate, patient-centred care. Ethical competence allows nurses to make informed decisions that uphold professional standards and patient rights even in complex situations. Justice is the impartial treatment of individuals and the equitable allocation of rights and resources among all patients' involvement, A review on pharmacological interventions for delirium highlights the lack of strong evidence supporting the efficacy of anti-psychotics. The allocation of these drugs must be approached with careful consideration, ensuring that any intervention is justified (Burry et al., 2019).

In conclusion, effective management of delirium in low-resource settings such as Zambia requires a comprehensive approach that includes education, cultural sensitivity and policy support. Integrating delirium-focused content into nursing curricula and providing specialised training for practicing nurses are important steps towards early detection and management. The strategies not only enhance patient care but also contribute to the overall strengthening of the healthcare system. Ethical dilemmas, such as balancing patient autonomy with safety concerns, are important in delirium care. Providing nurses with ethical decision-making frameworks and support systems is important to navigate these challenges and uphold patient rights.

References

Azimzadeh, D., Arbour, C., et al. (2023). Nurses' perceptions of family involvement in delirium assessment/management in cardiac surgery critical care. *Canadian Journal of Cardiology.* 39(10), pp. S218–S219. https://doi.org/10.1016/j.cjca.2023.06.334.

Assa, A.H., Wicks, M.N. *et al.* (2021). Family caregivers' experience of patients with delirium in critical care units: a state-of-the-science integrative review. *American Journal of Critical Care.* 30(6), pp. 471–478. doi: 10.4037/ajcc2021394.

Baluku Murungi, E., Niyonzima, V. et al. (2023). Improving nurses' knowledge and practices of delirium assessment at Mbarara Regional Referral Hospital: a quasi-experimental study. *Advances in Medical Education and Practice*, 14, pp. 313–322. DOI https://doi.org/10.2147/AMEP.S398606

Banerdt, J.K., Mateyo, K. *et al.* (2021). Delirium as a predictor of mortality and disability among hospitalised patients in Zambia. *PLOS ONE*, 16(2), e0246330. https://doi.org/10.1371/journal.pone.0246330.

Bradford, C.V., Fung, M., *et al.* (2023). Delirium assessment and treatment strategies in critically ill paediatric patients: a Paediatric Pharmacy Association practice-based research network survey study. *Journal of Paediatric Pharmacology and Therapeutics*, 28(6), pp. 540–552. https://doi.org/10.5863/1551-6776-28.6.540.

Boerma, E.C., van der Kuur, A., *et al.* (2019). Impact of a premorbid psychiatric disorder on the incidence of delirium during ICU stay, morbidity, and long-term mortality. *Critical Care Research and Practice*, 2019, pp. 1–8. https://doi.org/10.1155/2019/6402097.

Burry, L., Hutton, B., *et al.* (2019). Pharmacological interventions for the treatment of delirium in critically ill adults. *Cochrane Database of Systematic Reviews*, 2019(9), CD011749. https://doi.org/10.1002/14651858.CD011749.pub2.

Barth, A.A., Weigel, B.D., *et al.* (2016), Stressors in the relatives of patients admitted to an intensive care unit. *Revista Brasileira de Terapia Intensiva*. 28(3), pp. 323–329. https:// doi: 10.5935/0103-507X.20160055.

Burton, J.K., Craig, L., *et al.* (2021). Non-pharmacological interventions for preventing delirium in hospitalised non-ICU patients. *Cochrane Database of Systematic Reviews*, 2021(11), CD013307. https://doi.org/10.1002/14651858.CD013307.pub.

Boland, J.W., Lawlor, P.G., *et al.* (2019). Delirium: non-pharmacological and pharmacological management. *BMJ Supportive & Palliative Care*, 9(4), pp. 482–484.

Cui, N., Zhang, Y., *et al.* (2022). Quality appraisal of guidelines on physical restraints in intensive care units: a systematic review. *Intensive & Critical Care Nursing*, 70. https://doi.org/10.1016/j.iccn.2021.103193.

Ely, E.W. & Inouye, S.K., 2001. Delirium in mechanically ventilated patients: validity and reliability of the confusion assessment method for the intensive care unit (CAM-ICU). *JAMA*, 286(21), pp.2703–2710. doi:10.1001/jama.286.21.2703.

Du Plooy, N., Day, C., *et al.* (2020). Prevalence and outcome of delirium among acute general medical inpatients in Cape Town, South Africa. *South African Medical Journal*, 110(6), pp. 519–524. DOI: 10.7196/SAMJ.2020.v110i6.14363.

Fuchs, S., Bode, L., *et al.* (2020). Delirium in elderly patients: prospective prevalence across hospital services. *General Hospital Psychiatry*, 67, pp. 19–25. https://doi.org/10.1016/j.genhosppsych.2020.08.010.

George, G., Fricker, M., *et al.* (2022). Screening for delirium and dementia in older hospitalised adults in Zambia. *Journal of the Neurological Sciences*, 436, p. 120186. https://doi.org/10.1016/j.jns.2022.120186.

Geriatric Medicine Research Collaborative (2022). Improving delirium screening and recognition in UK hospitals: results of a multi-centre quality improvement project. *Age and Ageing*, 51(2), https://doi.org/10.1093/ageing/afab243.

Hebeshy, M.I. *et al.* (2025). Effect of educational training about CAM-ICU on nurses' knowledge, confidence, and practice to detect delirium among critically ill patients in intensive care unit. *BMC Nursing*, 24(1). https://doi.org/10.1186/s12912-025-03395-0

Hosker, C., Ward, D. (2017). Hypoactive delirium. *BMJ.* 357:j2047. doi: 10.1136/bmj.j2047.

Jiang, T., Tung, T-H., *et al.* (2024). Difficulties faced by intensive care nurses in caring for patients with delirium: a cross-sectional, multicentre study. *Australian Critical Care*. 37(4), pp. 530–538. https://doi-org.bcu.idm.oclc.org/10.1016/j.aucc.2023.12.004.

Johnson, G.U., Towell-Barnard, A., *et al.* (2024). Delirium prevention and management in an adult intensive care unit through evidence-based nonpharmacological interventions: a scoping review. *Collegian.* 31(4), pp. 232–251. https://doi.org/10.1016/j.colegn.2024.05.001.

Jackson, D. and Cleary, M. (2025). Hypoactive delirium: the critical need for collaboration between families and nurses in prevention, recognition and care. *Journal of Advanced Nursing.* 81(5), pp. 2834–2836. https://doi.org/10.1111/jan.16778.

Kim, C.M., van der Heide, L. (2021). Overview and strategy analysis of technology-based nonpharmacological interventions for in-hospital delirium prevention and reduction: systematic scoping review. *Journal of Medical Internet Research*. 23(8), e26079. https://doi.org/10.2196/26079.

Kwizera, A., Nakibuuka, J., *et al.* (2015). Incidence and risk factors for delirium among mechanically ventilated patients in an African intensive care setting: an observational multicentre study. *Critical Care Research and Practice*. https://doi.org/10.1155/2015/491780

la Cour, K.N., Christensen, N.C., *et al.* (2024). Patient recall of intensive care delirium: A qualitative investigation. *Acta Anaesthesiologica Scandinavica*. 68(8), pp. 1050–1058. https://doi.org/10.1111/aas.14463.

Keith, N., Harrowell, L., *et al.* (2025). The effects of dexmedetomidine on postoperative delirium in adult cardiac surgical patients: a Bayesian meta-analysis and trial sequential analysis. *Acta Anaesthesiologica Scandinavica.* 69(6), e70069. https://doi.org/10.1111/aas.70069.

Lange, S., Mędrzycka-Dąbrowska, W., *et al.* (2022). Patients' and relatives' experiences of delirium in the intensive care unit—a qualitative study. *International Journal of Environmental Research and Public Health.* 19(18), p.11601. https://doi.org/10.3390/ijerph191811601.

Li, X., Zhang, L., Gong, F., Ai, Y. (2020). Incidence and Risk Factors for Delirium in Older Patients Following Intensive Care Unit Admission: A Prospective Observational Study. *J Nurs Res.* 28(4):e101. doi: 10.1097/jnr.0000000000000384.

Miranda, F., Seron, P., *et al.* (2023). Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) for the diagnosis of delirium in adults in critical care settings. *Cochrane Database of Systematic Reviews*. 2023(11), CD013126. https://doi.org/10.1002/14651858.CD013126.pub2.

Mortensen, C.B., Poulsen, L.M., *et al.* (2020). Mortality and HRQoL in ICU patients with delirium: protocol for 1-year follow-up of AID-ICU trial. *Acta Anaesthesiologica Scandinavica*. 64(10), pp. 1519–1525. https://doi.org/10.1111/aas.13679

Mailhot, T., Cossette, S., *et al.* (2022). The development of the MENTOR_D nursing intervention: Supporting family involvement in delirium management. *International Journal of Older People Nursing*. 17, e12462. https://doi.org/10.1111/opn.12462

Marckmann, G., Schildmann, J. (2022). Quality and ethics in health care. *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz* [online], 65(3), pp. 335–341.: https://doi.org/10.1007/s00103-022-03492-4.

Mart, M.F., Williams Roberson, S., et al. (2021). Prevention and management of delirium in the intensive care unit. *Seminars in Respiratory and Critical Care Medicine*. 42(1), pp. 112–126. https://doi:10.1055/s-0040-1710572 .

Molina-Mula, J., Gallo-Estrada, J. (2020). Impact of nurse-patient relationship on quality of care and patient autonomy in decision-making. *International Journal of Environmental Research and Public Health.* 17(3), p. 835. https://doi.org/10.3390/ijerph17030835.

Nursing and Midwifery Council of Zambia (NMCZ) (2019) *Nurses and Midwifery Act*. Lusaka: NMCZ, p. 11. Available at: http://www.gnc.org.zm.

Nursing and Midwifery Council of Zambia (NMCZ) (2024) *Nursing Care Standards (2024)*. Lusaka: NMCZ. Available at: http://www.gnc.org.zm.

Paddick, S.M., Lewis, E.G., et al. (2018). Identification of delirium and dementia in older medical inpatients in Tanzania: a comparison of screening and diagnostic methods. *Journal of the Neurological Sciences.* 385, pp. 156–163. https://doi.org/10.1016/j.jns.2017.12.006.

Ranieri, V., Madigan, K. (2017). Caregiver burden and distress following the patient's discharge from psychiatric hospital. *BJPsych Bulletin.* 41(2), pp. 87–91. https://doi.org/10.1192/pb.bp.115.053074.

Rosgen, B.K., Davidson, J.E. (2021). Associations between caregiver-detected delirium and symptoms of depression and anxiety in family caregivers of critically ill patients: a cross-sectional study. *BMC Psychiatry*. 21(1). http://dx.doi.org.bcu.idm.oclc.org/10.1186/s12888-021-03200-7.

Rengel, K.F., Jackson, J.C. (2021). Motoric subtypes of delirium and long-term functional and mental health outcomes in adults after critical illness. *Critical Care Medicine* [online], *Volume 49(5)*, pp. e521–e532. https://DOI:10.1097/CCM.0000000000004920

Shen, Y.Z., Peng, K., Zhang, J., Meng, X.W., Ji, FH. (2018). Effects of Haloperidol on Delirium in Adult Patients: A Systematic Review and Meta-Analysis. *Med Princ Pract.* 27(3):250-259. doi: 10.1159/000488243

Salehi, Z., Joolaee, S., Hajibabaee, F., Ghezeljeh, T.N. (2021). The challenges of using physical restraint in intensive care units in Iran: A qualitative study. *J Intensive Care Soc.* 22(1):34-40. doi: 10.1177/1751143719892785.

Sweet, L., Adamis, D., et al. (2014). Ethical challenges and solutions regarding delirium studies in palliative care. *Journal of Pain and Symptom Management*. 48(2), pp. 259–271. https://doi.org/10.1016/j.jpainsymman.2013.07.017.

Sadaf, F., et al. (2023). Prevalence and risk factors of delirium in patients admitted to intensive care units: A multicentric cross-sectional study. *Cureus*. 15(9), e44827. http:// doi: 10.7759/cureus.44827.

Seron, P., Iriarte, R., et al. (2023). Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) for the diagnosis of delirium in adults in critical care settings. *Cochrane Database of Systematic Reviews.* 2023(11), CD01312. https://doi.org/10.1002/14651858.CD013126.pub2.

Sharifi, A., Khoddam, H. (2021). The principles of physical restraint use for hospitalized elderly people: an integrated literature review. *Systematic Reviews*. 10(1). https://doi.org/10.1186/s13643-021-01676-8

Spiegelberg, J., Song, H. (2020). Early identification of delirium in intensive care unit patients: improving the quality of care. *Critical Care Nurse*. 40(2), pp. 33–43. https://doi.10.4037/ccn2020706.

Tonna, J., Dalton, A. (2021). The effect of a quality improvement intervention on sleep and delirium in critically ill patients in a surgical ICU. *Chest.* 160(3), pp899-908. https://doi.org/10.1016/j.chest.2021.03.030.

Vitorino, M.L., Henriques, A., et al. (2025). The effectiveness of family participation interventions for the prevention of delirium in intensive care units: a systematic review. *Intensive & Critical Care Nursing.* 89. https://doi.org/10.1016/j.iccn.2025.103976.

van den Boogaard, M., Wassenaar, A. (2020). Influence of sedation on delirium recognition in critically ill patients: a multinational cohort study. *Australian Critical Care.* 33(5), pp. 420–425. https://doi.org/10.1016/j.aucc.2019.12.002

Wu, N., Zhang, Y. (2023). Incidence, prevalence and risk factors of delirium in ICU patients: a systematic review and meta-analysis. *Nursing in Critical Care.* 28(5), pp. 653–669. https://doi-org.bcu.idm.oclc.org/10.1111/nicc.12857.

Wilson, J.E., Mart, M.F. (2020). Delirium. *Nature Reviews Disease Primers.* 6(1). https://doi.org/10.1038/s41572-020-00223-4.

Wang, Y., Li, X. (2023). Psychological stress and associated factors in caring for patients with delirium among intensive care unit nurses: a cross-sectional study. *Australian Critical Care.* 36(5), pp. 793–798. https://doi.org/10.1016/j.aucc.2022.09.006.

Zhou, J., Li, H. (2024). Moral dilemmas regarding physical restraints in intensive care units: understanding autonomy, beneficence, non-maleficence and justice in the use of physical restraints. *Journal of Multidisciplinary Healthcare*. pp. 1619–1627. https://doi.org/10.2147/JMDH.S455910

Enteral Nutrition in Critical Care: Dispelling Myths and Strengthening Evidence-Based Practice

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ABSTRACT

Background: Enteral Nutrition (EN) is the preferred method of nutritional support in the critically ill, it is associated with preserved gut integrity, reduced infections, and complications, shorter hospital stays and improved recovery. In Zambia, guidelines on EN in critical illness are unavailable, fuelling persistent myths and variations in content and delivery. These include inconsistences in the timing of feeds especially at night (''resting phase''), differences in strict gastric residual volume (GRV) thresholds and inconsistent securing of nasogastric tube (NGT). All of which continue to undermine optimal delivery of EN in intensive care units (ICU) and increase the risk of complications.

Aim: This paper challenges common myths regarding EN in critical care and embeds evidence-based practice through the introduction of practical solutions for improved implementation.

Method: A critical review of current clinical guidelines and studies was carried out. Evidence was sourced from CINAHL and PubMed, published in English within the last five years.

Findings: This critical review found the use of NGT (unless contra-indicated) remains the preferred method for the delivery of EN; however, it is essential to reinforce NGT safety through appropriate NGT fixation. Regular nutritional monitoring is essential for preventing malnutrition and electrolyte imbalances. Continuous 24-hour feeding optimises calorie and protein delivery. In addition, moderate GRVs (<500 mL/6h) are not predictive of aspiration or intolerance.

Persistent barriers include entrenched myths such as 'NG active', unnecessary EN resting phases overnight, protocol non-availability, and resource limitations. Proposed solutions include structured staff education, multidisciplinary collaboration, and localised adaptation of international guidelines.

Conclusion: Myths surrounding EN remain a significant barrier to effective critical care nutrition. Evidence supports continuous, uninterrupted EN, liberalised GRV monitoring, secure NGT management, and daily nutritional assessments. Incorporating structured teaching tools into critical care education may bridge the evidence-to-practice gap, enhance patient outcomes and support best practice

Keywords: enteral nutrition, critical care, gastric residual volume, nutrition barriers, evidence-based practice, intensive care

Healthcare professionals' myths surrounding enteral nutrition (EN) remain a significant barrier to effective critical care nutrition (Ramaswamy et al., 2025). However, it has to be stated that EN is a cornerstone of critical care nutrition supporting gut integrity, immune modulation and recovery in critically ill patients (Singer et al.,2023). Therefore, it is a cause for concern that in the presence of robust evidence, healthcare professionals' misconceptions continue to drive inconsistent practice and suboptimal nutrition delivery. Myths such as interruptions during the night and an overreliance on gastric residual volumes (GRVs) (in Zambia termed 'NG active'), lead to calorie deficits and avoidable complications. In addition, the unnecessary use of orogastric (OG) tubes persists in many critical care units (Smith., 2020), preventing effective oral care as part of the ventilator care bundle. In addition, OG tubes increase the risk of oral trauma, knotting around the endotracheal tube and tube migration due to the inability to secure tubes safely (Saletes et al., 2025).

Over a decade ago, Cahill et al's (2010) multi centre observational study reported that approximately 60% of required calories and protein were delivered during the first 12 days of critical care admission, with delays of up to 149 hours before initiating EN. Similarly, Marik (2014) identified common EN myths, urging clinicians and nurses to abandon practices unsupported by evidence. As Ramaswamy et al (2025) emphasise, malnutrition remains a potential risk factor for infection, delayed extubation, prolonged hospital stays and mortality. Outdated feeding strategies, which include cessation of EN in stable patients, for example, those recently extubated, misinterpretation of GRVs, failure to secure NGTs, and preference for OGTs, still undermine EN effectiveness. In addition, the lack of guidelines in Zambia prevents standardisation of care provision (Igor et al.,2020). Maphenduka et al (2024) argue that recent investigations in Zambia show that

critical care nutrition practice is shaped more by habit than evidence, an over-reliance on the use of OG tubes with patients still being subjected to early morning ‘’resting phases,’’ despite the lack of evidence to support such interruptions (Singer et al., 2023).

Aim

The aim of this paper is to critically review the current evidence in order to challenge the common myths regarding EN in critical care and embed evidence-based practice through the introduction of practical solutions for improved implementation.

Methods

A detailed literature search was completed covering all three areas. Literature research was carried out using available databases including the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, PUBMED and Google Scholar exploring research from 2020 to 2025. Seminal articles published more than five years ago were included for context. To facilitate the search keywords/phrases such as reduction in nutritional complications in critical illness and patients needing enteral feeding through enhanced knowledge and practice in a critical care unit; independent keywords were identified and used such as Enteral Nutrition in critical care, GRV interpretation, NGT fixation. ‘WITH’ ‘AND’ Boolean operators used to connect the terms.

Findings & Discussion

This paper provides a critical appraisal of the evidence relating to common myths surrounding enteral nutrition in critical illness. For clarity the results and discussion have been integrated to provide one overall discussion of findings. Five themes were identified and included the need for continuous 24-hour feeding, interpretation of GRVs, avoidance of OG tubes, securing of NG tubes and the importance of nutritional monitoring.

The Importance of Providing Full EN Regimen within a 24-Hour Period

Any interruption of EN such as fasting for investigations, surgery or deliberate withholding of feeds at night significantly reduces calorie and protein intake, resulting in increasing nutritional deficits (Singer et al., 2023). This can lead to poor clinical outcomes such as impaired wound healing, increased risk of infection, prolonged mechanical ventilation, prolonged hospital stays and higher mortality (Lu et al., 2025). It is important to note that critically ill patients often require a higher calorie intake due to the effects of critical illness, comorbidities and the phase of the disease, or organ dysfunction (Chatterjee & Garg., 2023). Also, there may be a period of under nutrition prior to admission to critical care (Wiese & Ballard., 2025). In countries such as Zambia, where there is limited availability of commercial feeds (Abdoola et al., 2025; Mer & Dünser.,2025), as Miyoba et al (2018) found up to 60% of hospitalised patients in one hospital in Zambia were at nutritional risk. Therefore, it is crucial that critically patients receive the full amount of EN needed. It is also important to consider that EN contributes to fluid balance, therefore, deliberate withholding of EN without a medical reason can adversely impact on overall fluid balance and increase the risk of acute kidney injury (AKI) (Di Mario et al., 2025).

Gastric Residual Volumes (GRVs)

Historically, GRV monitoring was used to assess gastric emptying and predict aspiration risk (Feng et al., 2025; Wang et al., 2025a). However, emerging evidence has challenged this practice, showing that moderate GRVs are physiological and do not correlate with aspiration, pneumonia, or ventilator-associated complications (Reintam et al., 2021). In their randomized control trial, Smith et al., (2022) indicated that the elimination of routine gastric residual volume assessment does not increase the rate of adverse events but instead increased nutrition provision. Further, the trial revealed that use of a protocol for practice change, together with mandatory in-service training may affect changes in nursing practice. The use of a Nurse-Driven protocol to eliminate routine gastric volume measurements for practice change as well as mandatory in-service training may improve nursing practice (Carlo., 2024). Jenkins et al’s 2024 study of GRV monitoring practices in UK intensive care units revealed that current ESPEN guidelines also recommend avoiding routine GRV monitoring, or if it is performed, using higher cutoffs (up to 500mls every 6 hours) rather than the traditionally conservative thresholds (Singer et al., 2023). The move away from routine GRV monitoring reduces unnecessary interruptions in EN, enhances caloric and protein delivery, and decreases nursing burden (Carlo., 2024).). Nevertheless, clinicians remain cautious, especially in high-risk patients with known gastrointestinal dysmotility or intolerance. It is a cause for concern that in Zambia, terms such as ‘NG active’ are still used, however, there is no definition around what this means, and it often results in un-necessary withholding of EN. Guidelines recommend avoiding routine GRV monitoring or using thresholds as high as

500mls/6 hours (Reintam et al., 2021; Singer et al., 2023), as this enhances nutrient delivery (Reignier et al., 2025).

Avoidance of OG Tubes

While both NGTs and OGTs provide access for EN, NGTs remain the preferred route in most clinical scenarios (Zaher et al., 2025). The use of OGTs must be restricted to specific cases where NGT placement is contraindicated, such as patients with maxillofacial trauma, basal skull fractures, or nasal obstructions (Soumya & Malapur., 2024). Insertion of OGTs should be seen as a high-risk procedure, following reported cases of incorrect tube placement and knotting around the endotracheal tube (O'Connell et al., 2021; Chavda et al., 2017). Also, OGTs are associated with increased risks of oral trauma, discomfort, and reduced tolerance (Bathobakae et al., 2024). Their insertion and maintenance can also be more technically challenging, and oral secretions may increase the risk of colonisation and local infections (Fatemizadeh et al., 2025). However, recently, Saletes et al (2025) plan to conduct a cluster randomised crossover trial in France, to identify the effect of NGT versus OGT placement and ventilator associated pneumonia (VAP). It is anticipated that the results from this study will be used to develop guidelines to prevent VAP. Currently, best practice remains to use an NGT in critically ill adults due to their ease of placement, patient comfort, and lower complication rates (Guenter et al., 2025).

Securing NG Tubes

NG tubes must be secured as this increases the risk of tube migration, dislodgement and complications (Glen et al., 2025). There are different methods for NG securing, for example, Aeberhardt et al's (2023) found that nasal bridles significantly reduce unplanned extubations of NGTs but may increase the risk of nasal trauma or pressure injury. However, for resource limited countries such as Zambia this is not an option, therefore, use of tape ('strapping') is often the method used. It is a cause for concern that in high heats adhesive tapes can become loosened or stretched, increasing the risk of tube migration (Isfahani et al., 2023). In consequence, critical care nurses need to check the NG tube is secured every hour, and this should be part of routine nursing care.

Nutritional Monitoring

In critically ill patients, nutrition assessment is required on admission and then monitoring is required throughout the patients stay. This includes anthropometry, biochemical indices, and electrolyte panels (especially phosphate, potassium, magnesium) to prevent refeeding syndrome (Singer et al., 2023). Monitoring cumulative caloric and protein adequacy reduces deficits and improves recovery trajectories (Stanisavljevic et al., 2025; Nazari.,2025). Nutrition monitoring should be treated with the same vigilance as vital signs, particularly in critically ill patients whose metabolic demands and tolerance can change rapidly (Singer et al., 2023). In addition, biochemistry results, where possible must be measured, include phosphate, potassium and magnesium levels, especially during the initiation of feeding and preventing refeeding syndrome, a potentially fatal complication (Borriello et al., 2025). However, in resource limited settings, this may not be feasible (Mogase et al., 2025), although the ideal would be daily, weekly may be the best that can be achieved.

Critical care nutrition is a multi-disciplinary responsibility (Abdoola et al., 2025; Wang et al., 2025b), as often adjustments to EN requirements are needed throughout a patients' stay. The 'one-size fits all' approach to nutritional support does not work and individual nutritional assessment and ongoing monitoring is crucial to meet the challenges in providing enteral nutrition in critical care (Reignier et al., 2025). As the target caloric intake depends on the specific condition and changes in patients' condition, for example, sepsis or trauma. While there has been an increase in critical care services in low-income countries within the region, the provision of nutrition services and nutritionists remains under-developed in many countries (Aongola et al., 2024). Therefore, integrating nutritional assessments routinely into nursing and medical rounds increase adherence and early detection of complications such as under-nutrition (Ho et al., 2025). Good nutritional care is a human right and there is urgent need to develop programmes and actions that aim to promote access to nutritional care for all patients who are at risk or already malnourished (Cardenas et al., 2023).

Table 1. Common Myths versus Evidence-Based Practices in Enteral Nutrition (EN) for critically ill patients		
Myth	**Evidence-Based Practice**	**Supporting Evidence**
EN should be interrupted overnight to "rest the gut."	Continuous 24-hour feeding optimizes caloric and protein delivery; interruptions cause deficits in calory requirement with no proven benefit. In addition, EN contributes towards patients' fluid balance, therefore, withholding feeds increases the risk of acute kidney injury (AKI).	Singer et al (2023)
Moderate GRVs are signs of intolerance and aspiration risk.	GRVs ≤500 mL/6 h are usually physiological. Routine GRV checks are not recommended; feeding should not be stopped unless accompanied by intolerance signs.	Feng et al (2025) Wang et al (2025a)
OG tubes are safer than NG tubes.	NG tubes are safe and effective for most ICU patients; OG tubes carry higher risk of oral trauma and are used only when NG is contraindicated. OG tube insertion rate associated with high failure rates. OG tubes increase the risk of knotting around the ETT	Zaher et al., (2025); Connell et al (2021)
NG tube security is a minor issue.	Secure fixation prevents dislodgment, aspiration, and repeated insertions, ensuring consistent EN delivery.	Glen et al., (2025); Aeberhardt et al (2023)
Nutritional monitoring is optional and secondary to other ICU priorities.	Nutrition must be monitored like a vital sign. Daily assessment of energy/protein adequacy and electrolytes prevents malnutrition and refeeding complications.	Stanisavljevic et al (2025); Nazari.,(2025)

Table 2. Barriers to effective Enteral Nutrition (EN) in Critical Care and Practical Solutions			
Barrier/Challenge	**Impact on Patient Care**	**Evidence-Based Solution**	**Supporting Evidence**
Habitual overnight "resting phase" of feeds	Caloric/protein deficits, delayed recovery	Implement continuous 24-hour EN with protected feeding protocols	Maphenduka et al., (2024)
Misinterpretation of GRVs (stopping feeds for <500 mL)	Underfeeding, prolonged ICU stay	Adopt higher GRV thresholds (≤500 mL/6h) or omit routine monitoring	Feng et al (2025); Wang et al (2025a)
Frequent NG tube dislodgment due to poor fixation	Feeding interruptions, aspiration risk, patient discomfort	Use secure fixation techniques; verify placement with radiography	Isfahani et al (2023)
Overuse of OG tubes without clear indication	Oral trauma, discomfort, higher displacement risk	Prefer NG tubes; reserve OG tubes for facial trauma or special cases	Soumya & Malapur (2024).
Lack of routine nutritional monitoring	Missed malnutrition, refeeding syndrome, electrolyte imbalances	Monitor nutrition daily (intake charts, biochemical markers, electrolytes)	Singer et al (2023);
Clinician unfamiliarity with guidelines	Poor adherence to best practice; myth perpetuation	Ongoing training, local protocol development, multidisciplinary rounds	Igor et al (2020)

This critical review of the literature relating to healthcare professionals' myths surrounding EN provision in critical care reveals a lack of evidence-based practice and research which needs to be urgently addressed. In accordance with the Critical Care Nurses Association of Zambia (CCNAZ) (2023) position paper on safe staffing in critical care units, it is a requirement that a Registered Critical Care Nurse (RCCN) is on-duty 24 hours a day and patients have immediate access to an RCCN. In consequence, RCCNs are in a unique position to address the issues and anomalies found affecting EN. With critical care nurses often routinely monitoring and delivering EN, this is a patient safety issue that needs to be urgently addressed. It is of utmost importance to remember that nutrition is a human right in critical illness (European Society for Clinical Nutrition & Metabolism, 2022).

References

Abdoola, F., Adu-Amoah, H. G., Addo, B. K., Anku, E. K., Hill, L. T., Hamoonga, B. M., ... & African Clinical Nutrition Consortium. (2025). The critical care nutrition landscape in sub-Saharan Africa: Field insights and clinical commentary from resource-limited clinical settings. *Nutrition*, 112740. https://doi.org/10.1016/j.nut.2025.112740

Aeberhardt, L. E., Bains, V. K., & Desai, S. (2023). Safety and effectiveness of the nasal bridle securement device to retain feeding tubes in adult patients in the intensive care unit: an observational study. *Nutrition in Clinical Practice*, *38*(2), pp 386-401. https://doi.org/10.1002/ncp.10897

Aongola, A.M.M., Shanduba, T.N., Carter, C., Notter, J. (2024). Capacity strengthening for clinical nutrition in Zambia: a roadmap for success in tackling undernutrition. *Br J Nurs.* 33(8): pp S8-S9. doi: 10.12968/bjon.2024.33.8.S8.

Bathobakae L, Elshaarawy S, Bashir R, Phuu P, Melki G, Hajjar B. (2024). Orogastric Tube Fracture and Ingestion in a Patient With Hyperacute Delirium: A Unique and Potentially Catastrophic Complication. *J Med Cases*. 15(10): pp 283-286. doi: 10.14740/jmc4295.

Borriello, R., Esposto, G., Ainora, M. E., Podagrosi, G., Ferrone, G., Mignini, I., ... & Zocco, M. A. (2025). Understanding Refeeding Syndrome in Critically Ill Patients: A Narrative Review. *Nutrients*, *17*(11), pp 1866. doi: 10.3390/nu17111866

Cahill, N. E., Dhaliwal, R., Day, A. G., Jiang, X., & Heyland, D. K. (2010). Nutrition therapy in the critical care setting: What is "best achievable" practice? *Critical Care Medicine,* *38*(2), pp 395–401. https://doi.org/10.1097/CCM.0b013e3181c0263d

Cardenas, D., Correia, M. I. T., Hardy, G., Gramlich, L., Cederholm, T., Van Ginkel-Res, A., Barazzoni, R. (2023). The international declaration on the human right to nutritional care: A global commitment to recognize nutritional care as a human right. *Clinical Nutrition*, *42*(6), pp 909-918. https://doi.org/10.1016/j.clnu.2023.04.009

Carlo, A. N. (2024). Implementing a Nurse-Driven Protocol to Reduce Routine Gastric Residual Monitoring: A Quality Improvement Project. https://scholars.unh.edu/thesis/1816

Chatterjee, R., & Garg, A. K. (2023). Nutrition Delivery in Critically Ill Patients. In *Rational Use of Intravenous Fluids in Critically Ill Patients* (pp. 275-292). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-031-42205-8_13

Chavda, V., Alhammali, T., Farrant, J., Naidu, L., El-Rabaa, S. (2017). Nasogastric tube knotting: a rare and potentially overlooked complication among healthcare professionals. *BMJ Case Rep*. bcr2017220287. doi: 10.1136/bcr-2017-220287.

Critical Care Nurses Association of Zambia. (2023). Critical Care Nursing Safe Staffing Position Paper. Zamia

Di Mario, F., Sabatino, A., & Fiaccadori, E. (2024). Clinical nutrition in patients with Acute Kidney Injury: traditional approaches and emerging perspectives. *Clinical Nutrition ESPEN*. 65: pp 348-356. doi: 10.1016/j.clnesp.2024

European Society for Clinical Nutrition and Metabolism. (2022). Vienna declaration: Nutritional care is a human right. https://www.espen.org/espen/vienna-declaration-nutritional-care-is-a-human-right [Accessed 02.11.25]

Fatemizadeh, S., Mahboobi, H., Moghtadaie, A., Sarmadian, A. J., & Kamal, M. A. (2025). Enteral Feeding Dilemmas: Navigating the Impact of Bacterial Contamination in Hospitalized Populations. *Current Nutrition & Food Science*, *21*(2), pp 140-147. DOI: https://doi.org/10.2174/0115734013295502240604074931

Feng, L. F., Li, X. W., Zhu, X. Q., & Jin, L. N. (2025). Advances in management strategies for enteral nutrition-related gastric retention in adult patients with nasogastric tubes. *World Journal of Gastrointestinal Surgery*, *17*(3), pp 101751. doi: 10.4240/wjgs.v17.i3.101751

Glen, K., Weekes, C. E., Banks, M., & Hannan-Jones, M. (2025). What Is the Evidence to Support Ongoing Nasogastric Tube Position Testing? A Prospective Observational Study of Adverse Events in Australia and the United Kingdom. *Worldviews on Evidence-Based Nursing*, *22*(1), e70001. https://doi.org/10.1111/wvn.70001

Guenter, P., Bruwer, L., Linford, L. H., Quatrara, B., & Raman, A. (2025). NCPD. The Basics of Enteral Nutrition Delivery in Adult Patients for the Medical-Surgical Nurse. *Medsurg Nursing*, *34*(1). DOI 10.62116/MSJ.2025.34.1.24

Ho, H., Cerullo, L., Jin, R., Monginot, S., & Alibhai, S. M. (2025). Retrospective Analysis of the Impact of a Dietitian and the Canadian Nutrition Screening Tool in a Geriatric Oncology Clinic. *Nutrients*, *17*(9), pp 1591. https://doi.org/10.3390/nu17091591

Igor, T. P., Hamacher, S., Oliveira, F. L. C., Thomé, A. M. T., & Bozza, F. A. (2020). What factors predict length of stay in the intensive care unit? Systematic review and meta-analysis. *Journal of Critical Care, 60*, pp 183–194. https://doi.org/10.1016/j.jcrc.2020.08.003

Isfahani, M. N., Abootalebi, A., Ghaznavi, K., & Dolatabadi, L. K. (2023). Comparison of the effectiveness of two types of commercial endotracheal tube holders, with the conventional method in a manikin model. *Advanced Biomedical Research*, *12*(1), pp 30. DOI: 10.4103/abr.abr_192_21

Jenkins, B., Calder, P. C., & Marino, L. V. (2024). Gastric residual volume monitoring practices in UK intensive care units: a web-based survey. *Journal of the Intensive Care Society*, *25*(2), pp156-163. https://doi.org/10.1177/17511437231210483

Lu, X., Wang, X., Cai, J., Cao, Y., Wang, Y., Yu, W., ... & Wang, Q. (2025). Current status and influencing factors of enteral nutrition interruption among critical patients: a systematic review. *Frontiers in Nutrition*, *12*, 1462131. https://doi.org/10.3389/fnut.2025.1462131

Maphenduka, S., Carter, C., Notter, J. (2024). Reduction of complications in critically ill patients needing enteral feeding in an Intensive Care Unit at a tertiary hospital in Zambia: A Quality Improvement Project. Unpublished Dissertation Birmingham City University.

Marik, P. E. (2014). Enteral nutrition in the critically ill: Myths and misconceptions. *Critical Care Medicine, 42*(4), pp 962–969. https://doi.org/10.1097/CCM.0000000000000145

Reignier, J., Rice, T. W., Arabi, Y. M., & Casaer, M. (2025). Nutritional Support in the ICU. *BMJ*. pp *388*. https://doi.org/10.1136/bmj-2023-077979

Soumya, M., & Malapur, R. S. (2024). Comparison of Clinical Outcome of Bacterial Colonization between Nasogastric and Orogastric Enteral Feeding Tubes in Neonates in the Neonatal Intensive Care Unit. *Apollo Medicine*, *21*(3), pp 236-240. https://doi.org/10.1177/09760016241240005

Mer, M., & Dünser, M. W. (2025). Nutrition in the critically ill in resource-limited settings/low-and middle-income countries. *Current Opinion in Clinical Nutrition & Metabolic Care*, *28*(2), pp 181-188. *DOI:* 10.1097/MCO.0000000000001110

Miyoba N, Musowoya J, Mwanza E, Malama A, Murambiwa N, Ogada I, Njobvu M, Liswaniso D. (2018). Nutritional risk and associated factors of adult in-patients at a teaching hospital in the Copperbelt province in Zambia; a hospital-based cross-sectional study. *BMC Nutr*. 6(4), pp40. doi: 10.1186/s40795-018-0249-4.

Mogase, T., Van Onselen, A., Rodriguez-Sanchez, N., & Galloway, S. D. (2025). The Identification and Management of Refeeding Syndrome in Inpatient Severely Acutely Malnourished Children Aged 6 to 59 Months in Sub-Saharan African Countries: A Systematic Review and Meta-Analysis. *Children*, *12*(9), 1223. doi: 10.3390/children12091223

Nazari, A. (2025). Nutritional Requirements for Optimal Surgical Recovery. In *Handbook of Oral and Maxillofacial Surgery and Implantology* (pp. 1-78). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-36962-9_283-1

O'Connell, F., Ong, J., Donelan, C., Pourmand, A. (2021). Emergency department approach to gastric tube complications and review of the literature. *American Journal of Emergency Medicine*. 39; 259.e5-259.e7. https://doi.org/10.1016/j.ajem.2020.07.038

Ramaswamy, T., DeWane, M. P., Dashti, H. S., Lau, M., Wischmeyer, P. E., Nagrebetsky, A., & Sparling, J. (2025). Nine myths about enteral feeding in critically ill adults: An expert perspective. *Advances in Nutrition, 16*(1), 100345. https://doi.org/10.1016/j.advnut.2024.100345

Reintam Blaser, A., Starkopf, J., Alhazzani, W., Berger, M. M., Casaer, M. P., Deane, A. M., … & Oudemans-van Straaten, H. M. (2021). ESICM clinical practice guidelines: Nutrition therapy in the critically ill intensive care unit patient. *Intensive Care Medicine, 47*(3), 365–384. https://doi.org/10.1007/s00134-020-06322-2

Saletes J, Guitton C, Valleroy J, et al. (2025). Effect of nasogastric versus orogastric tube placement on ventilator-associated pneumonia incidence in critically ill patients: a study protocol for a cluster randomised crossover trial in 16 intensive care units in France (SONG trial). *BMJ Open.* 15, e099840. doi: 10.1136/bmjopen-2025-099840

Singer, P., Blaser, A. R., Berger, M. M., Calder, P. C., Casaer, M., Hiesmayr, M., et al. (2023). ESPEN practical and partially revised guideline: clinical nutrition in the intensive care unit. *Clinical Nutrition*, *42*(9), pp 1671-1689. https://doi.org/10.1016/j.clnu.2023.07.011

Smith, M., Smith, M., & Robinson, K. N. (2022). Using nurse-driven protocols to eliminate routine gastric residual volume measurements: a retrospective study. *Critical Care Nurse*, *42*(4), e1-e10. https://doi.org/10.4037/ccn2022584

Stanisavljevic, J., Grubor, N. N., Marjanovic, S., Palibrk, I., Bezmarevic, M., Velickovic, J., et al. (2025). Nutritional Adequacy and Day-to-Day Energy Variability: Impacts on Outcomes in Severe Trauma Patients. *Nutrients*, *17*(19), 3180. https://doi.org/10.3390/nu17193180

Wang, A., Yang, J., Jiang, L., Chen, J., Ma, Y., & Wang, Y. (2025a). Best evidence summary for aspiration prevention and management in critically ill patients with nasogastric feeding. *Journal of clinical nursing*, *34*(4), pp 1170-1186.https://doi.org/10.1111/jocn.17342

Wang, H., Yan, M., Wang, H., He, L., & Zhang, Y. (2025b). Effects of multi-disciplinary team nursing model combined with high-fiber dietary intervention on blood glucose level and nutritional status in elderly type 2 diabetes patients: a

prospective clinical trials perspective intervention study. *Frontiers in Medicine*, *12*, 1631466. https://doi.org/10.3389/fmed.2025.1631466

Wiese, A. N., & Ballard, E. (2025). Improving energy and protein intake via an oral nutrition support pathway in the intensive care unit and beyond: An uncontrolled before and after study. *Australian Critical Care*, *38*(5), pp 101273. https://doi.org/10.1016/j.aucc.2025.101273

Zaher, S., Alhindi, R., Alturki, L., Alsobhi, E., Alahmadi, L., & Aldhowayan, H. A. (2025). Enteral Nutrition Practices and Complications in ICU Settings: A Cross-Sectional Study of Healthcare Professionals' Perspectives in Saudi Arabia. *Journal of Multidisciplinary Healthcare.* 2025. pp289-304. https://doi.org/10.2147/JMDH.S506732

Use of ICU Patient Diaries to Promote Psychological Well Being of ICU Survivors and their Relatives

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ABSTRACT

Background: Patients surviving critical illness experience memory gaps regarding their intensive care stay which can impact on Post Intensive Care Syndrome (PICS), affecting their cognitive, social and mental health.

Aims: This evidenced based literature search aimed at promoting understanding and awareness on the benefits of ICU diaries among nurses, patients and their relatives.

Method: MEDLINE and CINAHL database were used to identify systematic reviews. Eight articles that were reviewed and considered relevant to the topic.

Findings: Patients that stay longer in the intensive care units (ICU) could benefit from an ICU patient diary to promote psychological stability, as diaries have a positive impact on the quality-of-life post ICU discharge. Staff entries also give families a perspective of the accurate state of the patient while in ICU. However, the use of patient diaries in Zambia is unclear due to illiteracy, lack of diary entry guidelines and shortage of ICU staff. Therefore, this makes it difficult to determine how patients and relatives would perceive a patient diaries initiative.

Conclusion: Patients diaries have the potential to bridge memory gaps for patients who have been admitted to critical care, however, the use of diaries in sub-Saharan Africa is limited. Formulation of national guidelines on what needs to be entered in the patient diaries in the low- and middle-income countries would be of help to protect the nurses.

Keywords: Patient Diaries, Post Intensive Care Syndrome, Critical Care

Bruna et al (2019) identified that memory gaps in Intensive Care Unit (ICU) survivors are common, leaving both the relatives and patient with challenges as they try to understand the impact and outcomes of critical illness. The use of ICU patient diaries has been identified as one way to help patients and family members understand the time spent in ICU by providing a factual account of their ICU stay. This is important because as Hackenberger (2023) points out 50-80% of patients who survive critical illness develop Post Intensive Care Syndrome (PICS), which affects cognitive, social, and mental health which can adversely impact on quality of life. This study argues that there is a positive benefit from the use of patient diaries as part of rehabilitation and therefore there is a need to implement them on a wider scale. This view is supported by Mickelson et al (2021) who found that patient diaries could help to reduce family stress, they help with processing the period in ICU which the information recorded supporting individualised discussion and reflection and important form of communication for patients and families. This paper critically reviews the current evidence on the use of patient diaries.

MEDLINE and CINAHL database were used to gather literature as they are of high-quality studies related to medicine and nursing and were widely used back (Oermann et al., 2021). To expand the search Boolean operators was used. Key words include: 'benefits of patient diaries' gave a result of 170 articles, a further search using 'to the patient and relatives', (search with and) gave 79 articles, followed by 'in adult ICU' (full text) (search with and) gave 11 articles. The search was further narrowed down to 'systematic reviews' (full text), (search with and) gave 8 articles. The 8 articles were critically reviewed as they were all identified as relevant to the topic.

Inclusion criteria included articles published in English as this was easy to understand and interpret the finding. Articles published within five years (2018-2023) to provide the latest evidence-based data and articles relating to adult ICUs for specificity and comparison as well as those in full text. Studies which focused on adult critical care survivors and non- survivors to expand the discussion. Exclusion criteria included articles not in English, paediatric articles and duplicates.

While the use of patient diaries is increasing and routinely used in High Income Countries (HIC), they have been identified beneficial to the ICU survivors. Nydahl and Deffner (2021) point out that patient diaries have

been used in the UK since 2000 and have shown to help address the memory gap experienced by patients while in ICU. However, Rogan et al (2020) argue that it is vital to have guidelines on what content is to be written in the patient diary by healthcare professionals and relatives. This study further suggests that a patient diary is not a medical record, however, it is important to maintain confidentiality.

In low-income countries (LIC) such as Zambia, there is limited evidence or research into the use of patient diaries (Swagata et al., 2020). Reasons for their limited use in LIC, include illiteracy levels and social-cultural inhibitions, also, lack of awareness by critical care professionals of the way in which they can be used, which in turn may affect the implementation and use of this intervention (Swagata et al., 2020). However, as Wang et al (2020) indicate there is a perception that some patients and relatives would shun away from collecting the patient diaries as they would not want to be reminded of their time in ICU. Therefore, it is important that critical care nurses discuss and explain to the patient and relatives the benefits of a patient diary and how it can assist with communication and psychological care for both the relatives and the patient.

There are no ICUs in Zambia practicing the use of patient diaries, therefore, there is urgent need for research on how patients and relatives would react to this initiative. Pattison et al (2019) and Rice et al (2022) state that when patients are admitted to ICU, one third of family members end up with post-traumatic stress disorder (PTSD) and if the patient dies while in ICU, it increases to 60%. Therefore, there is urgent need to provide strategies to support both patients and family members, to help address this. Rice et al (2022) further states that ICU nurses are omnipresent in ICU but may not always spare time to discuss their activities, however, patient diary can help bridge this gap. This would promote understanding of patients' progression to the family and as family members can write in the diary, it also provides an opportunity for staff to understand what relatives are thinking and going through. Teece et al (2017) argues that patient diaries can act as a debriefing aid for staff, patients and relatives. For relatives it can help them understand the care that has been provided when they are not present, they can also share their experiences. For staff handing over the diaries once the patient has been discharged from ICU, it provides a structure to discuss the patients care and answer any questions. However, Melby et al (2020) study stated that some patients receiving the diary enabled them to start the grieving process. Therefore, it is crucial that when the patient diary is given to a patient or relative, time is spent with them to prepare them psychologically for reading the diary. It is important to note that further follow-up is often needed. Eklind et al (2023) suggest that the patient diary can help increase the patient's coherence and enhance the rate of recovery following ICU admission, which in turn helps promote quality of life through improving psychological well-being.

It is a cause for concern that ICUs in LIC may not meet the psychological needs of patients and their family members. Drumright et al (2021) initiated the implementation of patient diaries in ICU to evaluate the impact of patient diaries. This study supported initiation of patient diaries as a cost effective and efficient intervention in helping the patient and family cope with the burden of disease. However, it emphasised that patient diaries should be integrated with the implementation of open visitation and family participation in the patients care. This would help promote the psychological stability of the patient and family members. According to Aitken et al (2017), family members described their use helped them to have a personal space for reflection in ICU while writing their entries in the patient's diary.

Flahault et al (2021) investigated patients' experience of ICU diaries six months after ICU discharge and found that ICU survivors experienced mixed emotions in relation to the nursing care received and the severity of their illness. It further states that other ICU survivors perceived the memories to be of positive impact and others as of negative impact depending on the wish to remember their stay in ICU. While the ideal would be to gain consent prior to initiating a patient diary, in ICU this is often not possible due to the severity of the critical illness. Therefore, it is important to explain the patient diary concept and prepare the patient psychologically before handing over the diary to them after ICU discharge. Hester et al (2016) supports this, arguing that patient diaries are not just beneficial to the patient but to the family members too. They further state that patient diaries can help family members adjust their perceptions of the situation and enhance their understanding of the seriousness of the patient's condition. This helps them appreciate the care given to the patient during the ICU stay.

Patient diaries can be, and are often, a nurse-lead initiative and identifying which patient can benefit from this programme is vital (Hackenberger., 2023). Hackenberger (2023) indicates that patients for whom a stay of longer than 24 hours in ICU is anticipated, patients on mechanical ventilation, patients older than 18 years and patients with families who can speak English can all benefit from the use of patient diaries. Nielsen et al (2018) also supported that criteria and decision making need to be made on which patients are to have the patient diaries. Ige et al (2021) reported that 72.5% of post ICU patients suffer stress due to ICU admission

and the need for implementation of patient diaries upon admission (gaining consent when possible) should be encouraged. Barreto et al (2019) and Schofield et al (2021) argue there is still limited evidence on the efficacy of patient diaries in reducing PTSD, anxiety and depression in patients and family members. Therefore, the is an urgent need for further research.

Xihui et al (2021) argues that special medical treatment measures may cause memory loss therefore a cognitive behavioral therapy (patient diary) can help alleviate PTSD and depression/ anxiety experienced by patients after discharge from ICU. Nydahl and Deffner (2021) supports that patient diaries can be a useful communication tool between the nurses and the relatives while the patient is in ICU. Nakashima et al (2020) point out that a patient diary helps in communication and understanding of information as families can re-read their entries as they wish and also read what other family members have written thereby promoting assimilation of information and access to information at their own pace.

Nakashima et al (2020) reported that staff entries in the patient diaries showed support to the families and signalled that the family and staff are in this together and also gave hope to the family. It further states that staff entries gave the family a factual perspective of the accurate state of the patient. Sayde et al (2020) encourages the use of photos/symbols or pictures to describe difficult information to promote understanding. However, this must be balanced with local protocols. Mickelson et al (2020) argue that despite the positive results of patient diaries to the relatives, some family members may not be willing to take part in this as they would already be stressed by the patient's illness and admission to ICU. Diaries may be perceived to be time consuming and family members may find it difficult to express their emotions especially if other family members have access to the diary. However, Nakashima (2020) argues that critical care nurses need to educate family members about the potential benefits of writing in the patient diaries as it can help improve their psychological well-being.

Hester et al (2016) reported that there are some barriers that can hinder critical care staff using a patient diary, these include fear of legal implications of the entries. Nielsen et al (2016) supports this perception, arguing that critical care nurses with limited experience may have anxiety in writing in the patient diary. Therefore, it is crucial that patient diaries are seen as a medical record, and copies retained in the patient records. Also, plain English and not medical terminology should be used in a patient diary, and it does not replace medical or nursing records.

Rogan et al (2020) pointed out that some nurses may be concerned about how family members may cope with a poor prognosis. However, it is important to note, that patient diary must be used as one of the communication strategies and not as the only method. If is patient is deteriorating, the patients next of kin must be counselled and regular updates provided. Also, Nair et al (2015) supported the argument that some critical care professionals felt relatives would criticise the care rendered to the patient hence nurses were very cautious about the information and incidences entered in the patient's diary. Costa et al (2019) supported the need to create local guidelines in relation to patient diary entries Nielsen (2018) supports that photographs can be captured at all stages, however, these need to be taken using an official camera and not a personal phone, also consideration as to how the photographs will be printed. Therefore, it is crucial that guidelines are developed.

Critical care nurses are in the best position to take the lead in the implementation of patient diaries in ICU and should be proactive in developing guidelines and implementing this initiative (Hu et al., 2023). However, as Butler et al (2018) argues any member of the critical care team can write in the diary and it is crucial the diary is seen as multi-disciplinary tool. Monitoring and evaluation are crucial, Blair et al (2017) identifies that reviewing and auditing diary entries can help understand and evaluate the care provided.

Deciding when to hand over the patient diary needs to be an individual decision, for example, if a patient dies, it may be appropriate to handover the diary to the relatives, however, at what point this occurs has to be based on the situation and the context (Johannson et al.,2018). For example, Galazzi et al (2022) points out family members may request the diary. For patients discharged from ICU alive, often the diary is handed over once the patient has been discharged from hospital and returns to an ICU follow up clinic (Eklind et al., 2023). However, in LIC follow up is limited and ICU follow up is non-existent, therefore, it is important that guidelines include when and how patient diaries are handed over to patients.

Patient diaries have been shown to have a positive impact on the psychological rehabilitation and recovery for ICU survivors. The patient diary can act as a therapeutic tool for the patient, relatives and the staff. Therefore, implementation of patient diaries in the LIC can help improve communication between family members and staff, thereby helping to reduce stress experienced by ICU survivors. There is need for

formulation of guidelines for the initiation of the diary, recording keeping content to be entered and how to hand over the diary. Clear guidelines and policies will provide structure for critical care staff and families. Finally, there is urgent need for context specific research to evaluate the use of patient diaries in Zambia.

References

Aitken, L., Rattray, J., Hull, A. (2017). The creation of patient diaries as a therapeutic intervention – for whom? *Nursing in Critical Care*. 22(2), pp 67-69. https://doi.org/10.1111/nicc.12286.

Barreto, B., Luz, M., Rios, M. et al (2019). The impact of ICU diaries on patients and relatives' outcomes. *Critical Care Journal*. 23, pp 411. https://doi.org/10.1186/s13054-019-2678-0.

Blair, T., Eccleston, S., Binder, H. et al (2017). Improving patient experience by implementing an ICU Diary for those at risk of Post Intensive Care Syndrome. *Journal of Patient Experience*. 4(1), pp4-9. https://doi.org/10.1177/2374373517692927.

Bruna, B., Mariana, L., Dimitri, G. (2019). The impact of intensive care unit diaries on patients and relative's outcomes. *Critical Care Journal*. 23(411). https://doi.org/10.1186/s13054-019-2678-0.

Butler, R., Monsalve, M., Herman, T. et al (2018). Estimating time physicians and other Health Care Workers spend with patients in ICU. *Am J Med*. 131(8). pp972. https://doi..org/10.1016/j.amjmed.2018.03.015.

Costa, A., Padfield, O., Hayden, P. et al. (2021). Improving patient diary use in Intensive care. *Journal of Intensive Care Society*. 22(1). pp27-33. https://doi.org/10.1177/1751143719885295 .

Drumright, K., Gervasio, R., Hill, C. et al (2021). Implementation of an ICU diary program at a veteran's affairs Hospital. *J Nurse Care Qual.* 36(2). pp155-161. https://doi.org/10.1097/NCQ.0000000000000510.

Eklind, S., Olby, K., Akerman, E. (2023). The ICU diary – A significant complement in the recovery after intensive care. *Intensive & Critical Care Nursing.* 74. pp103-337. https://doi.org/10.1016/j.iccn.2022.103337.

Flahault, C., Trosdoef, M., Sonrier, M. et al (2021). ICU survivors experience of ICU Diaries. *Critical Care Explorations*. 3(5). pp03-84. Https://doi.org/10.1097/CCE.0000000000000384.

Galazzi, A., Adamini, I., Bazzano, G. et al (2022). ICU diaries to help bereaved family members in their grieving process. *Intensive & Critical Care Nursing*. 68. pp103-121. https://doi.org/10.1016/j.iccn.2021.103121.

Hackenberger, A. (2023). Intensive Care Unit Diaries: A Nurse-Led Program. *Critical Care Nurse*. 43(1). pp20-30. https://doi.org/10.4037/ccn2023573.

Hester, M., Ingalls, N., Hatzfeld, J. (2O16). Perception of ICU diary utility and feasibility in combat ICU. *Military Medicine*. 181(8), pp895-899. https://doi.org/10.7205/MILMED-D-15-00210.

Hu, D., Ji, X., Liang, Y. et al (2023). Effect of ICU diary on quality of life of ICU survivors and their relatives. *Nursing Open*. 10(8), pp4985-4994. https://doi.org/1o.1002/nop2.1819.

Ige, O., Kalawole, I., Aliboye, O. (2021). The psychological impact of ICU admission on relatives of critically ill patients. *Rwanda Medical Journal*. 78(4), pp17-26. https://dx.doi.org/10.4314/rmj.v78i43.

Johansson, M., Magnusson, L., Hanson, E. (2019). Nursing staff experiences of intensive care unit diaries. *Nursing in Critical Care.* 24(6), pp407-413. https://doi.org/10.1111/nicc.12416.

Melby, A., Moi, A., Gjengedal, E. (2020). The experiences of bereaved relatives on receiving the ICU diaries of their loved ones. *Norwegian Journal of Clinical Nursing.* 15. https://doi.org/10.4220/Sykepleienf.2020.81061en.

Mickelson, R., Piras, S., Brown, L. et al. (2021). The use and usefulness of ICU diaries to support family members of critically ill patients. *J Crit Care.* 16, pp168-176. https://doi.org/10.1016/j.jcrc.2020.10.003.

Nair, R., Mitchel, M., Keogh, S. (2015). The extent and application of patient diaries in Australian intensive care units. *Australian Critical Care*. 28(2), pp93-102. https://doi.org/10.1016/j.aucc.2014.09.001.

Nakashima, H., Gallegos, C. et al (2020). Journal writing by families of critically ill patients. *Critical Care Nurse*. 40(5). pp 26-37. https://doi.org/10.4037/ccn2020293.

Nielsen, A., Angel, S. (2016). How diaries written for critically ill influence the relatives. *Nursing in Critical Care*. 21(2), pp88-96. https://doi.10.1111/nicc.12158.

Nielsen, A., Angel, S., Egerod, I. et al. (2018). The effects of diaries written by relatives for ICU patients on posttraumatic stress. *BMC Nurs*. 17(37). https://doi.org/10.1186/s12912-018-0306-y.

Nydahl, P., Deffner, T. (2021). Use of Diaries in Intensive Care Unit Delirium Patients: German Nursing Perspectives. *Crit Care Nurs Clin North Am*. 33(1), pp37-46. Doi: 10.1016/j.cnc.2020.10.007

Oermann, M., Wingley, J., Lesli, H. et al (2021). Integrity of Databases for literature searches in Nursing Avoiding predatory journals. ANS. 44(2), pp 102-110. https://doi.org/10.1097/ANS.0000000000000349.

Pattison, N., Lucas, C., Gull, K. et al. (2019). A mixed methods study exploring the use of patient diaries in the ICU. *Intensive Crit Care Nurs.* 51. pp 27-34. https://doi.10.1016/j.iccn.2018.10.005.

Rice, R., Qualls, B., Carey, M. et al. (2022). Use of diaries for family members of ICU patients to reduce Long-term PTSD. *Journal of Patient Experiences*. 9. pp110-5681. https://doi.org/10.1177/23743735221105681.

Rogan, J., Zielke, M., Drumright, K. et al (2020). Institutional challenges and solutions to evidence-based, patient–centered practice: implementing ICU diaries. *Critical Care Nurses.* 40(5), pp49-52. https://doi.org/10.4037/cnn2020111.

Sayde, G., Stefanescu, A., Conrad, E., et al (2020). Implementing an ICU diary program at a large academic medical centre. *General Hospital Psychiatry.* 66. pp 96-102. https://doi.org/10.1016/j.genhosppsych.2020.06.017.

Schofield, R., Dibb, B., Coles-Gale, R. et al. (2021). The experience of relatives using ICU diaries. Int. J. Nurs. Stud. 119, pp103-927. https://doi.org/10.1016/j.ijnurstu.2021.103927.

Swagata, T., Swati, P., Upendra, H. (2020). Intensive care unit diaries and the experiences of patients' families. Journal of patient-reported outcomes. 4(63). https://doi.org/10.1186/s41687-020-00229-2

Teece, A., Baker, J. (2017). How do patient diaries affect survivors' psychological recovery? *Intensive & Crit Care Nursing*. 41, pp 50-56. https://doi.org/10.1016/j.iccn.2017.03.002.

Wang. S., Xin. H., Hu. R. (2020). Effects of an ICU diary on psychiatric disorders, quality of life, and sleep quality among adult cardiac surgical ICU survivors. *BMC Critical Care*. 24(81). https://doi.org/10.1186/s13054=020-2797-7.

Xihui, S., Debin, H., Fan, Z., et al (2021). Effects of ICU diary on incidences of PTSD, anxiety and depression of adult ICU survivors. *JAN.* 77(7). pp2929-2941. https://doi.org/10.1111/jan.14706

Critical Care Outreach Follow-Up of a 16-Year-Old Male with Severe Head Injury in Rural Zambia: A Case Report

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ABSTRACT

Traumatic brain injury (TBI) presents unique challenges in resource-limited settings, particularly regarding post-discharge care and rehabilitation. This case report is of a 16-year-old male from a rural district in Zambia who sustained a severe TBI following a motorbike accident without helmet use. After initial stabilization in a tertiary hospital, the patient was discharged home and subsequently reviewed by a critical care outreach team four weeks later. The follow-up highlighted persistent neurological deficits, the need for structured rehabilitation, and the potential utility of telemedicine for remote specialist support. This case study underscores the importance of extending critical care services beyond hospital walls and integrating rehabilitation and digital health strategies in low-resource settings.

Critical care outreach following critical care discharge is a strategy designed to deliver intensive care expertise to patients after discharge from intensive care, however, follow up on the ward patients and post hospital discharge is still emerging in Zambia (Katowa-Mukwato et al., 2021). The World Health Organization (WHO) (2025) has set an ambitious target of meeting the unmet needs of rehabilitation through the Rehabilitation Initiative 2030. However, it is a cause for concern that rehabilitation following critical illness is limited in many low-income countries (Notter et al., 2024). With just five years away from the WHO's planned achievement for rehabilitation goals, countries such as Zambia urgently need to prioritise rehabilitation services within an already over-stretched healthcare system. For many healthcare systems in low-middle income countries, patients may be identified as medically fit for discharge but may still have ongoing complex care needs. In addition, with most hospitals located in cities and most patients living in rural areas access to ongoing care and rehabilitation is limited. Therefore, this case study presents a case study of a 16-year-old male, who sustained a severe head injury after a motorbike crash in a rural district in Zambia.

Summary of Patient Care

The patient who was not wearing a safety helmet was a passenger on a motorbike involved in a crash. Following initial care in a clinic, his condition deterioration and he was transferred approximately 160 km to a referral hospital for ongoing critical care. On arrival the patient was unable to maintain a patent airway due to a reduced level of consciousness, with a Glasgow Coma Scale (GCS) of 6/15 (E: 2 V: 1 M: 3). In consequence, he was intubated and transferred to the critical care unit for ongoing care. An initial computerised tomography (CT) scan showed diffuse cerebral oedema and a frontal contusion. Routine laboratory tests were within normal limits.

His serial GCS improved from 6/15 at admission to 12/15 at discharge. Post discharge neuro imaging was not feasible due to geographical and financial barriers. In addition, the patient's reduced level of consciousness, meant he could not be extubated; therefore, the decision was made to insert a tracheostomy to facilitate weaning from mechanical ventilation. Following a 60-day critical care stay, the patient was transferred to the general ward. He was discharged with a GCS of 12/15 (E:4, V:2, M: 6), tracheotomy and nasogastric tubes were in place, and he remained for a further 30 days before being discharged home. It was a cause for concern that he was discharged home with a tracheostomy and nasogastric tube in place with limited follow up. In consequence, a team from the critical care unit conducted an outreach visit.

The critical care outreach visit was four days following hospital discharge. During the assessment it was identified that the family who were his primary care givers had been given very limited advice on the care of the tracheostomy, nasogastric tube or the prevention of complications such as pressure ulcers. It was also a concern that the family, were unaware that the patient had been discharged for palliative care and that there had been no links with the local health facility. Therefore, this case study highlights the importance on injury prevention and the need for structured rehabilitation plans that span from the intensive care unit (ICU) to home, coupled with critical care follow up in both the wards and community.

The initial assessment revealed a residual left sided weakness, as well as a degree of cognitive impairment, it was also a concern that he had not been mobilised since his admission to hospital. In consequence, a trial of mobilisation which included sitting in a chair was performed; however, he was unable to maintain a seated posture partly due to severe muscle weakness and atrophy, a consequence of prolonged bedrest. The family were shown home based neuro-rehabilitation exercises with focus on mobility, building strength and preventing contractures.

The outreach team were able to connect the family with key healthcare teams including the local health post and specialists at the tertiary hospital, this was achieved through the use of mobile phones with the aim of providing ongoing management, support and rehabilitation. A formal link was established with the health post staff who agreed to assume responsibility for routine follow-up and monitoring. They relayed information on the patients progress to the tertiary hospital team, thereby strengthening continuity of care and facilitating prompt communication of emerging needs. The family reported increased confidence in providing care within the limited availability of structured community rehabilitation services. This co-ordinate approach provided a practical and collaborative framework for extending specialist input into the rural setting, which recognised the persistent barriers related to internet connectivity, financial constraints, and wider systemic challenges (Notter et al., 2023). This case study has shown that a coordinated rehabilitation approach is possible, however, there is an urgent need for critical care teams to share their knowledge and skills of rehabilitation with ward teams and patients. Also, the need for rehabilitation professionals across the patient pathway.

Critical reflection on this case study highlighted the urgent need for rehabilitation services to be developed as part of the patient pathway. Currently in the absence of a structured pathway, critical care outreach constitutes a vital strategy providing post discharge support to patients in rural areas, promoting continuity of care and enabling early identification of complications (Chatukuta et al., 2021). In this case, follow-up of his progress involved an initial home visit followed up by telephone support, while it is accepted that home visits may not be possible for all patients, the use of telephone follow up may be a solution. However, it is a cause for concern that this method remains underutilised within the local healthcare context (Oshomoji et al., 2024), and that currently, only mobile phone links are possible, there are opportunities to develop telemedicine to support healthcare professionals in the community setting.

Structured rehabilitation plans supported by community health workers (CHWs) could strengthen this approach further. Mapulanga and Dlungwane (2025) highlight that CHWs in Zambia already provide elements of physical rehabilitation, health education and follow-up within communities, enabling patients to recover closer to home. Their study highlights that integrating CHWs into tele-rehabilitation programmes can enhance continuity of care by allowing them to perform standardised assessments, assist patient's exercises, and escalate concerns through digital platforms. This strategy could bridge the equity gap created by limited specialist coverage in rural areas. Nevertheless, its success depends on adequate CHW training, supervision and clear referral pathways and resources to ensure safety, quality and accountability in care delivery. The use of a telephone and/or a telemedicine service could increase access to multidisciplinary rehabilitation and support targeted interventions designed to minimise disability and promote functional improvement within the context of recovery following TBI (Chan et al., 2023; Jenkin et al 2023).

Adbul-Rahman et al (2025) point out that currently almost half of these patients are discharged without patient / family education regarding their condition, and without any structured post-acute follow-up care or ongoing support. This is supported by Lindlof et al (2024) who suggest that structured and collaborative communication strategies such as written discharge plan, family education, and multidisciplinary coordination significantly enhance understanding, adherence, and overall recovery. As Kim et al (2022) point out nurses play a vital role in bridging communication between the multidisciplinary team and caregivers by ensuring that key information on patient care, support is delivered clearly and compassionately. Moreover, proactive follow up strategies such as phone calls and community outreach visits have shown to reduce readmissions and support sustainable recovery in low resource settings (Gledhill et al., 2023).

This case study highlights the potential importance of critical care outreach in supporting continuity of care following discharge from intensive care units, particularly in rural and resources -limited settings. The follow-up in this case study illustrates the challenges faced by families and patients when discharged with complex needs, including limited knowledge regarding specialist care such as tracheostomy and nasogastric tube care. Also, with limited information regarding any possibilities of rehabilitation support and minimal links to with local health facilities the family faced an uncertain and challenging future.

Incorporating rehabilitation support through a structured discharge plan developed during the patient's hospital stay, followed up by support from the health centres and CHW, with access to specialist support

through a telephone and/or telemedicine service may improve recovery and reduce long-term morbidity (Wilkinson et al., 2022). Given the geographical size of Zambia, this suggested approach provides a practical solution to specialist shortages and geographical barriers, supporting continuity of care and rehabilitation. (Chatukuta et al., 2021).

This case study supports Ackah et al (2021) findings that traumatic brain injury (TBI) is a leading cause of disability and death among adolescents in sub-Saharan Africa, with road traffic accidents being a major contributor (Chan et al. 2021). In Zambia, limited enforcement of helmet use and inadequate access to rehabilitation services, particularly in rural areas, exacerbate poor outcomes (Mapulanga & Dlungwane, 2025). In consequence, a key learning from this case study is the importance of injury prevention as this would either have prevented the life changing injuries or mitigated the severity of the injuries (Wumbei., 2021).

References

Abdul-Rahman, T., Badar, S.M., Lee, S., Wolfson, M., Kundu, M., Zivcevska, M., Wireko, A.A., Atallah, O., Roy, P., Davico, J. and Ogbuti, S. (2025). Current status of neurotrauma management in resource-limited settings. *Annals of Medicine and Surgery*, 87(2), pp.673–683. Doi: 10.1097/MS9.0000000000002901.

Ackah, M., Gazali Salifu, M. and Osei Yeboah, C. (2021). Estimated incidence and case fatality rate of traumatic brain injury among children (0–18 years) in Sub-Saharan Africa. A systematic review and meta-analysis. *PLoS ONE*, 16(12), p.e0261831. https://doi.org/10.1371/journal.pone.0261831.

Chan, V., Estrella, M.J., Syed, S., Lopez, A., Shah, R., Colclough, Z., Babineau, J., Beaulieu-Dearman, Z. and Colantonio, A. (2023). Rehabilitation among individuals with traumatic brain injury who intersect with the criminal justice system: A scoping review. *Frontiers in Neurology*, 13, 1052294. Doi: 10.3389/fneur.2022.1052294.

Chatukuta, M., Groce, N., Mindell, J.S. and Kett, M. (2021). Access to rehabilitation services for road traffic injury patients in Namibia. *Disability and Rehabilitation*, 44(25), pp.7985–7992. https://doi.org/10.1080/09638288.2021.2008521.

Gledhill, K., Bucknall, T.K., Lannin, N.A. & Hanna, L., 2023. Defining ready for discharge from sub-acute care: a qualitative exploration from multiple stakeholder perspectives. *BMC Health Services Research*, 23(1), p.425. https://doi.org/10.1186/s12913-023-09285-y

Jenkin, T., Anderson, V.A., D'Cruz, K., Scheinberg, A. and Knight, S. (2022) 'Family-centred service in paediatric acquired brain injury rehabilitation: Bridging the gaps', *Frontiers in Rehabilitation Sciences*, 3, 1085967. https://doi.org/10.3389/fresc.2022.1085967.

Katowa-Mukwato, P., Banda, M., Kanyanta, M., Musenge, E., Phiri, P., Mwiinga-Kalusopa, V., Chapima, F., Simpamba, M., Kapenda, C. and Shula, H. (2021) 'Study protocol on stroke management: Role of nurses and physiotherapists at the Adult University Teaching Hospital, Lusaka Zambia', *Journal of Biosciences and Medicines*, 9, pp.25–37. Doi: 10.4236/jbm.2021.99003.

Kim, H.S., Kim, G.S., Lee, H., Choi, J.Y., Kim, Y.S. & Oh, E.G., 2022. Effects of the discharge education program on family caregivers caring for patients on mechanical home ventilation in Korea: a pilot test. *Home Health Care Management and Practice*, 34(4), pp.258–268. https://doi.org/10.1177/10848223221096344

Lindlof, J., Turunen, H., Valimaki, T., Huhtakangas, J., Verhaeghe, S. & Coco, K., 2024. Empowering support for family members of brain injury patients in the acute phase of hospital care: a mixed-methods systematic review. *Journal of Family Nursing*, 30(1), pp.50–67. https://doi.org/10.1177/10748407231171933.

Mapulanga, M. and Dlungwane, T. (2025) Situational assessment of physical rehabilitation services in Zambia: Issues and challenges. *Disability and Rehabilitation*, 47(15), pp.3947–3957. https://doi.org/10.1080/09638288.2024.2438256.

Notter, J., Carter, C., Nsonga, M. & Chongwe, M. (2023) The challenge of rehabilitation following critical illness in low-income countries. *British Journal of Nursing*, 32(21), pp. 1054-1055. https://doi.org/10.12968/bjon.2023.32.21.1054.

Oshomoji, Q.A., Sanni, T.M., Kanu, A.M., Oyeyemi, A.L. and Usman, A.I., 2024. Tele-rehabilitation in African rural areas: a systematic review. *Bulletin of Faculty of Physical Therapy*, 29(1), pp.1–13.https://doi.org/10.1186/s43161-024-00256-w.

Wilkinson, A., Higgs, C., Stokes, T., Dummer, J. and Hale, L. (2022) 'How to best develop and deliver generic long-term condition rehabilitation programmes in rural settings: An integrative review', *Frontiers in Rehabilitation Sciences*, 3, p.904007. https://doi.org/10.3389/fresc.2022.904007.

World Health Organisation. (2025). Rehabilitation Initiative 2030. https://www.who.int/initiatives/rehabilitation-2030

Wumbei, M. (2021) *Noncompliance with regulations on the use of safety helmets by motorcyclists in Tamale, Ghana*. Doctoral dissertation. Walden University. Available at: Noncompliance with Regulations on the Use of Safety Helmets by Motorcyclists in Tamale, Ghana - Birmingham City University

Additional information:

Consent to present this case study was obtained prior publication.

Author Guidelines

The International Perspectives in Emergency, Trauma and Critical Care Nursing is the journal for students completing the Birmingham City University Professional Practice Adult Critical Care and Cardiac Care programmes and is published in collaboration with the Critical Care Nurses Association of Zambia (CCNAZ). The journal is managed by the BCU HELS Centre of International Health Partnerships and on completion of the education programmes, CCNAZ have agreed to continue the journal using it as a vehicle to promote emergency, trauma and critical care nursing across Zambia and the wider central Africa region. The journal spans the whole continuum of acute and critical care nursing and includes all aspects of adult, paediatric and neonatal critical care nursing including surgery, medicine, cardiac, renal, neurosciences and rehabilitation.

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