



Management of Patients' and Nurses' vulnerability to acute illness in Emergency Units

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Abstract

Background: Managing acute illnesses in emergency units poses significant challenges to nurses, compromising their health and well-being. **Aims:** This mixed-method study assessed the management pattern of patients with acute illnesses and nurses' vulnerability in two Nigerian teaching hospitals. **Methods:** A convergent parallel study design was used, involving 92 nurses from emergency units. A three-section questionnaire research instrument adopting a cross-sectional survey type was used to collect quantitative data, and an in-depth interview schedule for qualitative data. Descriptive statistical analysis was done on quantitative data, and thematic analysis using inferential statistics, at $\alpha = 0.05$, was used for qualitative data analysis using IBM SPSS version 27. **Results:** Results showed that 48.9% of nurses were highly vulnerable, citing understaffing, poor infrastructure, and lack of institutional support as factors responsible for nurses' vulnerability. Coping strategies included time off duty (mean=3.27) and talking to colleagues (mean=3.27). Nurses faced intense physical, emotional, and social challenges, leading to stress and burnout. **Conclusion:** The study concludes that there is a significant association between management patterns and nurse vulnerability ($p < 0.05$). This implies that nurses working in the emergency units are vulnerable to various physical, emotional, and mental stress. Institutional support is limited, with few structured interventions. The study recommends urgent institutional reforms, including better staffing, equipment, and wellness programs, to support nurses in emergency units.

Keywords: Acute Illnesses, Emergency Units, Patient Management, , Pattern of Care, Vulnerability of Nurses

Introduction

The management of patients with acute illnesses in an emergency is a critical aspect of nursing care. Acute illnesses, ranging from minor conditions like the common cold to life-threatening diseases such as heart attacks or strokes, require prompt and

specialized care (WHO, 2023). Nurses play a vital role in providing prompt and adequate care to critically ill patients. Consequently, caring for acutely ill patients can take a toll on nurses' physical, emotional, and mental well-being, leading

to stress, depression, and anxiety. The high-stress environment of emergency nursing practice, combined with the emotional demands of caring for critically ill patients, has a deleterious impact on nurses' job satisfaction, retention, and overall quality of life (Ema et al., 2025).

Providing quality care to patients with acute illnesses is a fundamental aspect of nursing practice, particularly in emergencies where timely interventions are crucial. Nurses working in emergency units are often at the forefront of this care, managing patients with complex and traumatic conditions. This demanding work environment significantly contributed to nurses' physical, emotional, and mental breakdown, leading to stress, depression, and anxiety (Wells, 2024). The impact of acute patient care on nurses' well-being is a pressing concern, as it not only affects their own health and job satisfaction but also has implications for patient care outcomes. Factors such as long hours, rotating shifts, exposure to suffering patients, and interprofessional interactions contribute to nurse burnout, depression, and anxiety (Ganti et al., 2023).

Studies have shown that Critical care nurses have been found to have higher rates of depression and anxiety than the general public (Wells, 2024). Despite the growing recognition of nurse vulnerabilities leading to compassion fatigue, there is a need to specifically examine the effects of managing patients with acute illnesses on nurses working in emergency units of tertiary hospitals in Kwara state. This study aims to address this gap and provide

insights into the complex relationship between patient acuity, nursing care, and nurse well-being.

Objectives:

1. Evaluate nurses' socio-demographic and management patterns of patients with acute illnesses in emergency units of selected hospitals in Kwara State.
2. Examine the management pattern of patients with acute illnesses in emergency units of selected hospitals in Kwara State.
3. Explore the vulnerability of nurses in managing patients with acute illnesses in emergency units of selected hospitals in Kwara State.

Hypothesis

H₀: There is no significant association between the management pattern of patients with acute illnesses and nurse vulnerability in emergency units of selected hospitals in Kwara state.

Methods

Design and Setting: This study used a convergent mixed-method design to collect data from nurses working in emergency units of two hospitals in Kwara State, Nigeria: University of Ilorin Teaching Hospital and Kwara State University Teaching Hospital. These hospitals are chosen for their comprehensive emergency services and receipt of referral cases from other health centres within and outside the state.

Population and Sampling: A total population of 986 nurses (850 from University of Ilorin Teaching Hospital and 136 from Kwara State

University Teaching Hospital) were proportionately sampled, which yielded 85 nurses from University of Ilorin Teaching Hospital and 10 nurses from Kwara State University Teaching Hospital, giving a total sample of 95 nurses, out of which 92 nurses are eligible to participate in the study.

Tools for data collection: The Data Collection Instrument was a researcher-designed questionnaire (sections A-C) with open-ended questions in English. The questionnaire items were transcribed and used as an interview guide. The questionnaire's face and content validity were established through review of study objectives and feedback from experienced nurses who have spent over ten years working and coordinating emergency care in health institutions similar to the study setting. While reliability was determined using the split-half method and Spearman-Brown formula ($R = 2r/(1+r)$).

Data Collection and Analysis

Approval for this study was obtained from the research ethics committees of the Kwara State University Teaching Hospital and University of Ilorin Teaching Hospital (KWASUTH/IRC/246/VOL.11/94 and UITH/NHREC 02/02/2010). Nurses willingly participated and provided informed consent after receiving an explanation of the study's purpose and procedures. Quantitative Data Collection was conducted by Cross-sectional surveys using questionnaires administered to nurses at the Teaching hospital board rooms at their respective units. While Qualitative Data Collection using Focus Group Discussions (FGD) was conducted among 10 nurses

in the common rooms of the two hospitals. Discussions were moderated by researchers for a period of 35-45 minutes using a prepared in-depth interview checklist. Recorded discussions were transcribed verbatim for analysis. This approach provided rich, in-depth insights into nurses' experiences and perspectives on their management of patients with acute illnesses in the emergency units.

The analyses of data were done using descriptive statistics, while the hypothesis was analysed using inferential statistics to establish the relationship between the management pattern of patients with acute illnesses and nurses' vulnerability to unhealthy conditions in emergency units. The analysis of the data was based on 92 nurses whose responses met the criteria for analysis. Quantitative data analysis was carried out using IBM SPSS Version 26.0; descriptive statistics (frequencies, percentages, means, and standard deviations) summarized socio-demographics variables, management pattern of patients, and vulnerability of nurses. While the inferential statistics of chi-square tests were used to analyse associations between categorical variables and deprescribing knowledge/outcomes, with $p < 0.05$ indicating the statistical significance level.

Results

The socio-demographic profile of the 92 respondents shows an average age of nurses of 35 years, while those within the ages of 20-29 years made up the majority, and 12% were 50 years or

older. The majority (87%) of nurses in this study were female, and 53.3% of them practiced Islam. In terms of education, 62% have an RN/RM and a Bachelor of Nursing Science degree, among which 59.7% have a specialty in accident and emergency nursing (RAEN) with dual qualifications. Most nurses (95.5%) have 10-20 years of working experience, with only 15.2% having 21-35 years of working experience and nearing retirement.

Table 2 results show that 57.6% of nurses always admit patients using a national/standardized triage system. The table further revealed that any nurse on duty primarily initiates cardiopulmonary resuscitation, as an average of 10 acutely ill patients are managed per shift, with patients spending an average of 25 hours in the emergency unit before being transferred. Nurses (54.3%) have a 15–30-minute break per shift, while 43.5% of patients present with general medical conditions, commonly managed with Oxygen therapy. The specific medications used are based on suspected diagnosis, especially Intravenous fluid resuscitation, among others, in their units.

Table 3 presents various vulnerable conditions nurses face in emergency units while managing patients with acute illnesses. About 90% of nurses experience physical exhaustion, 34% affirmed that PPE is often provided to protect themselves, and almost 50% of them face one form of ethical dilemma or the other during the course of their duty. A higher number (68.5%) of nurses confirmed that they

received adequate training to handle mass casualties, as the average percentage claimed that the training provided for self-protection was continuous. An average proportion of nurses affirm that those who sustained injury/hazard while managing patients received support from the management, even though the support was not regular. The majority of nurses employed to work in emergency units were registered emergency nurses and were given in-service training on occupational safety. This implies that nurses with relevant qualifications were employed to work in the emergency units of the two institutions.

Table 4 reveals that, generally, there is an association between patterns of management of patients with acute illnesses and nurses' vulnerability in emergency units. Nurses associated the use of national/standardized triage systems, emergency nurses' initial triage assessment, as well as the initiation of CPR by any nurse on duty, subjecting nurses to vulnerability, leading to negative effect on nurses' well-being. This implies that there is a significant association between the management of patients with acute illnesses and the vulnerability of nurses managing patients in emergency units of selected hospitals in Kwara State, with significant p-values all less than 0.05; the null hypothesis is, however, rejected.

Tables:**Table 1: Socio-Demographic Variables of Respondents (N = 92)**

Socio-demographic Data	Frequency	Percent
Age (years)		
20 – 29	32	34.8
30 – 39	27	29.3
40 – 49	22	23.9
50 and above	11	12
Gender		
Male	12	13
Female	80	87
Specialty in Nursing		
RN/ RM	59	64.1
RAEN	29	31.5
Others	4	4.3
Rank		
NO. I/ NO. II	40	43.5
SNO/ PNO	28	30.5
CNO	19	20.7
ADNS/ DDNS	7	7.6
Years of experience		
1 – 10	50	54.3
11 – 20	28	30.4
21 – 30	9	9.8
31 – 35	5	5.4

Source: Field survey, 2025. **Key:** RN: Registered Nurse, RM-Registered Midwife, RAEN: registered Accidents and Emergency Nurse, NO: Nursing Officer, PNO: Principal Nursing Officer, SNO: Senior Nursing Officer, ADNS: Assistant Director of Nursing Services.

Table 2: The Management Pattern of Patients with Acute Illnesses in Emergency Units (n=92)

Items	Frequency	Percentage
What management pattern do you often administer to patients in your emergency unit?		
Wound dressing	2	2.2
Resuscitation	15	16.3
Administering oxygen	22	23.9
CPR Triage	53	57.6
What triage system is primarily used in your emergency unit?		
National/standardized triage	49	53.3
Modified national/standardized system	24	26.1
In-house developed system	8	8.7
No formal triage system	11	12
Who primarily perform initial triage assessment in your emergency unit?		
Emergency nurses	23	25
Medical officer	18	19.6
Triage nurse	34	37
Any nurse on duty	17	18.5
Who primarily initiates cardiopulmonary resuscitation in your units?		
Emergency nurses	28	30.4
Medical officer	16	17.4
Triage nurse	18	19.6
Any nurse on duty	30	32.6
How many numbers of acutely ill patients do you manage on each shift?		
1 – 10	44	47.8
11 – 20	14	15.2
21 – 30	22	23.9
More than 30	12	13

Table 2: Continue

Items	Frequency	Percentage
How many hours do patients spend in your unit before being transferred?		
1 – 10 hours	14	15.2
11 – 20 hours	15	16.3
21 – 30 hours	32	34.8
30 hours and above	31	33.7
The common outcome for patients managed with acute illnesses in your emergency unit is?		
Discharge home	22	23.9
Admit to the general medical ward	40	43.5
Referral to a specialist unit within the hospital	21	22.8
Transfer to another health facility	7	7.6
Death in the emergency unit	2	2.2
The common management pattern for patients with acute illnesses in your unit is/are		
Oxygen therapy	36	39.1
Cardiopulmonary resuscitation (CPR) and monitoring	6	6.5
Pain management	8	8.7
Intravenous fluid resuscitation	13	14.1
Airway management	6	6.5
Blood product transfusion	4	4.3
Specific medication based on suspected diagnosis	19	20.7

Source: Field survey, 2025.

Table 3: The Nurses' vulnerability in managing Patients with acute Illnesses in Emergency Units (n= 92)

Items	Never	Sometimes	Often	Mean $\pm$ SD
How often do you experience physical exhaustion during your shift?	2(2.2%)	8(8.7%)	82(89.1%)	3.38 $\pm$ 0.74
Do you regularly have adequate physical resources (e.g., PPE, equipment) to manage acute illnesses?	18(19.6%)	43(46.7%)	31(33.6%)	2.18 $\pm$ 0.8
How often do you experience injuries while attending to an acutely ill patient?	25(27.2%)	35(38%)	32(34.8%)	2.15 $\pm$ 0.91
How often do you face ethical dilemmas in the course of your duty?	22(23.9%)	24(26.1%)	46(50.0%)	2.28 $\pm$ 0.86
How often do you engage in activities outside of emergency nursing?	8(8.7%)	29(31.5%)	55(69.7%)	2.64 $\pm$ 0.82
Do you often have adequate training to handle mass casualty cases seen in emergency care?	7(7.6%)	22(23.9%)	63(68.5%)	3.04 $\pm$ 0.99
Is there continuous training for emergency nurses on the management of endemic diseases in your unit?	12(13%)	30(32.6%)	50(54.3%)	2.72 $\pm$ 1.04
Do you often have adequate support from your institution for injuries sustained in the course of duty in your institution?	21(22.8%)	32(34.8%)	39(42.4%)	2.3 $\pm$ 0.95
Do you regularly have enough registered emergency nurses on duty in your unit?	13(14.1%)	39(42.4%)	60(65.1%)	2.51 $\pm$ 0.99

Source: Field survey, 2025.

Table 4: Association between management patterns of patients with acute illnesses and nurses' vulnerability in emergency units in Kwara State hospitals. (n= 92)

Variable	Positive effect	Average effect	Negative effect	χ^2	P-value
The triage system is primarily used				8..32 ^a	0.02
National/standardized triage	0	12	37		
Modified national/standardized triage	0	11	13		
In-house developed system	0	4	4		
No formal triage system	0	1	10		
Who primarily performs the initial triage assessment				10.61 ^a	0.005
Emergency nurse	0	4	19		
Medical officer	0	10	8		
Triage nurse	0	10	13		
Any nurse on duty	0	4	13		
Who primarily initiates cardiopulmonary resuscitation				16.64 ^a	<0.001
Emergency nurse	0	3	25		
Medical officer	0	8	8		
Triage nurse	0	2	16		
Any nurse on duty	0	15	15		

χ^2 : Chi-square test

Discussion

The average age of nurses in this study was 35 years, with females constituting a large proportion, reflecting nursing being a traditionally female profession. Most nurses are relatively young, aligning with recent studies (Ali & Watson, 2018; Amouzeshi & Zarandi, 2022; Baptiste et al., 2021). In terms of education, 62% hold an RN/RM and a Bachelor's degree, while a little above average of nurses has a Master's in Accident and

Emergency Nursing, showing a focus on critical care. Most nurses have relevant qualifications for emergency unit work but limited experience, considering their age and length of service. Only very few have 21-35 years of experience and are nearing retirement. These findings highlight the need for ongoing education and in-service training to support this critical healthcare workforce, which is in agreement with the Couturier et al. (2023) study conclusions.

The Management Pattern of Patients with Acute Illnesses in Emergency Units

The emergency unit management pattern involves a 3-phase triage system: pre-arrival, throughput, and output. Nurses in this study opined that triage is a rapid assessment process prioritizing patients by severity, reducing chaos, and optimizing care. They maintained that patients are attended to base on the triage system. A system where patients are categorized into 3 levels, thus Red, Orange, and Yellow Zones, for timely care and resource allocation. This pattern of patient management aligns with Trisyani et al. (2023) pattern of management, which highlights nurses' multifaceted roles in emergency units. Care is time-sensitive, occurring within 5 minutes of arrival, to save lives.

This study further observes that the involvement of emergency nurses in initial triage assessment, as well as the initiation of CPR by any nurse on duty, has a positive effect on the patients, consistent with studies emphasizing the importance of timely CPR in improving survival rates, which also aligns with evidence suggesting nurse-led triage improves efficiency and accuracy (Jin *et al.*, 2020). This study suggested that standardized triage systems and nurse-led interventions are crucial in emergency units, particularly in the two studied hospitals in Kwara State, but put nurses' well-being at risk.

Nurses' vulnerability in managing Patients with acute Illnesses in Emergency Units.

Nurses in emergency units in this study face significant vulnerability that negatively impacts their health and profession. Nurses experience physical, psychological, and social vulnerability, leading to burnout, exhaustion, and emotional detachment. Prolonged working hours and back and neck pain, due to caring for critically ill patients, do take a toll on them. Alomari et al. (2021 and Afaya et al., (2021); WHO (2021), in different studies, observed that many nurses reported experiencing burnout symptoms like irritability, insomnia, and emotional detachment, and that CPR is particularly intense, provoking distress and grief. Workplace conflicts and violence are common, exacerbated by overcrowding, poor spatial capacity, and low staffing (Amoah 2021). These findings also align with Rogers' Theory of Unitary Human Beings, highlighting the interconnectedness of individuals and their environment (Butcher, 2023).

Meanwhile, this study's findings affirmed the study, which found that even though nurses' well-being is vulnerable, the use of national/standardized triage systems is specifically associated with a positive effect, consistent with recent studies highlighting the importance of standardized triage in improving patient outcomes (Kinman *et al.*, 2020).

Comparatively, in the focus group discussion on management patterns of patients with acute illnesses and nurses' vulnerability in emergency units, nurses identified challenges associated with providing immediate care, expressing that, despite nurses' efforts to care for their patients, they often encounter obstacles such as equipment shortages and infrastructure limitations. On this, a nurse observed that;

"We've had instances where oxygen cylinders are empty, and we're forced to use valve bag masks for resuscitation." Another nurse added that;

"When patients are bleeding profusely, we have to improvise with surgical gloves and bandages."

These accounts highlight the resourcefulness and adaptability required of nurses in emergency settings. However, they also underscore the need for adequate resources and infrastructure to support quality care. As one nurse lamented;

"We're ready to do our best, but a shortage of implements hinders us. No light, no suction machine... it's frustrating".

In this study, focus group discussion revealed challenges in managing patients with acute illnesses in emergency units, including triage, which is essential, but its effectiveness could vary due to patient flow and facility organization in terms of patient initial stabilization,

nurse-led intervention, and transition phases from the unit to the ward. One of the nurses noted that;

"Triage is not always necessary. If there's only one patient, you just attend to them without triage. It's about assessing the situation and responding accordingly. "This perspective suggests that triage is context-dependent, and nurses adapt their approach based on the specific situation. Other nurses echoed this sentiment, emphasizing the need for flexibility in emergency care. These findings highlight the complexities of emergency nursing, where nurses must navigate multiple challenges while providing high-quality care.

On the triage Challenges in emergency units, nurses in FGD shared mixed views on the effectiveness of triage in emergency units. While some saw triage as crucial for prioritizing patients, others questioned its practicality. As some nurses express that,

"We triage all patients... it helps us attend to critical cases first."

However, another nurse expressed scepticism that,

"Triage doesn't reduce the population... families push for attention, making it hard to prioritize. These perspectives highlight the tension between ideal and real-world triage practices. Nurses must navigate patient needs, family expectations, and resource constraints, making

triage a complex and sometimes contentious process.

Vulnerability of nurses to patients' illnesses in emergency units

This study observed the course of care for patients with acute illnesses that predisposed nurses to various significant vulnerabilities in emergency units. The majority (89.1%) of nurses experience physical exhaustion, compared with only 34% PPE availability for self-protection. This highlights the need for better staffing, workload management, and provision of adequate PPE to reduce the risk of infections and injuries among nurses working in emergency units. This current finding was supported by Alharbi, Jackson, and Usher's (2020) study. Furthermore, Alomari et al. (2021) reports align with findings of our study that nurses often experience injuries while attending to acutely ill patients and face ethical dilemmas in the course of managing their clients. These challenges often encountered by nurses in the course of solving patient problems usually have negative effects on well-being, especially in the form of physical, social, psychological, and pathological expressions. This emphasizes the need for continuous support and training for nurses, as recommended by the American Nurses Association. (2023).

Triangulation of qualitative and quantitative results

This study's mixed-method approach provides a comprehensive understanding of the impact of caring for acutely ill patients on nurses in Kwara state's emergency wards. The quantitative and qualitative findings converge, revealing a concerning picture of nurse vulnerability and burnout.

Quantitative data shows 48.9% of nurses experience high vulnerability, and 69.6% report negative job-related effects. Qualitative insights corroborate this, with nurses expressing physical, emotional, and psychological distress. They reported exhaustion, emotional exhaustion, and musculoskeletal pain, making it hard for nurses to disconnect from work. These findings have shown the picture of nurses' vulnerability and burnout in Kwara state's emergency wards.

The human toll of caring for acutely ill patients, especially among nurses, is evident in headaches, backaches, and mental breakdowns triggered by critical incidents. These findings highlight the need for targeted support and interventions to mitigate burnout and promote nurse well-being in emergency settings.

This study, in both quantitative and qualitative data, highlights various systemic challenges faced by nurses while managing patients in the emergency unit, such as Inadequate

staffing, Poor infrastructure, Lack of institutional support, especially following injuries, Inadequate breaks, and Prevalence of violence, especially against female nurses. These systemic issues contribute to nurse vulnerabilities, emphasizing the need for comprehensive support and interventions.

Conclusion

This study concludes that there is an association between patterns of management of patients with acute illnesses and nurses' vulnerability in emergency units ($p < 0.05$), especially on the use of national/standardized triage systems and emergency nurses' initial triage assessment, as well as initiation of CPR by any nurse on duty, which has a negative effect on nurses' well-being.

The majority of nurses experience physical exhaustion, compared with only a few PPE available for self-protection. This highlights the need for better staffing, workload management, and provision of adequate PPE to reduce the risk of infections and injuries among nurses working in emergency units

Recommendations

Government and hospital management should;

- i. Provide regular training and support for nurses to manage stress and prevent burnout

- ii. Implement strategies to improve work-life balance, such as flexible scheduling and adequate staffing.
- iii. Address inadequate positive working conditions, including a lack of resources and poor working environments
- iv. Provide additional support for female nurses, who may be experiencing unique challenges
- v. Foster a supportive work environment that encourages open communication and teamwork
- vi. Regular psychological counselling and debriefing sessions should be established for emergency nurses to process traumatic experiences and prevent long-term emotional damage.
- vii. Nurses should be supported in adopting healthy coping mechanisms, including rest periods, spiritual practices, support groups, and recreational activities.

Implications of the findings in the following areas are:

Clinical practice

1. Highlights the poor working environment of care in which patients are managed and it hazards that expose nurses to significant physical, emotional, and psychological stress, particularly during high-stakes interventions like cardiopulmonary resuscitation (CPR) and end-of-life care.

2. Revealed the need to prioritize nurse wellbeing by institutionalizing staff support programs such as counselling, debriefing, and wellness clinics in emergency units.
3. Stressed the need to promote team-based care and supportive leadership to reduce burnout and improve collaborative care outcomes.

Nursing Research

1. Exposes a gap in the context of specific evidence on how emergency care affects nurses' well-being in developing countries.

Nursing Education

- i. The need to integrate mental health and stress management modules into undergraduate and postgraduate curricula.
- ii. Emphasize the need to teach communication skills for conflict resolution, especially in high-tension units' nurses' encounters with patients and their families.

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