CLINICAL CHARACTERISTICS AND PRIORITY NURSING DIAGNOSES AMONG PATIENTS IN AN EMERGENCY DEPARTMENT

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Abstract

Emergency departments manage patients with diverse levels of acuity and rapidly changing physiological conditions, requiring systematic nursing assessment and prioritization. This study aimed to describe the demographic and clinical characteristics, triage levels, and priority nursing diagnoses of patients treated in an emergency department. A retrospective descriptive study was conducted using a de-identified hospital dataset containing 57 patient records from April 2026. Variables included demographic characteristics, triage level, neurological and respiratory assessment, vital signs, hydration indicators, selected nursing interventions, length of stay, disposition, and priority nursing diagnoses. Data were cleaned for case inconsistencies and obvious spelling variations, then analyzed using frequencies, percentages, means, standard deviations, medians, and ranges. Most patients were aged >41 years (54.4%), female (56.1%), and classified as triage P2 (77.2%). Patent airway was documented in 89.5% of patients, abnormal breath sounds in 21.1%, hypovolemia indicators in 19.3%, dry mucosa in 43.9%, and hyperthermia in 36.8%. Mean respiratory rate was 23.16±4.07 breaths/min, oxygen saturation 95.21±4.89%, pulse 100.02±18.43 beats/min, and emergency department length of stay 4.91±1.63 hours. The most frequent priority nursing diagnoses were hypovolemia (21.1%), acute pain (19.3%), ineffective airway clearance (12.3%), and ineffective breathing pattern (12.3%). The findings demonstrate heterogeneous acute care needs with prominent fluid, pain, and respiratory problems, supporting the importance of structured assessment and standardized nursing diagnosis in emergency care.

Keywords: Emergency Nursing, Emergency Department, Nursing Diagnosis, Triage, Patient Assessment

1. INTRODUCTION

Emergency care is a critical entry point to the health system for patients with acute illness and injury. The World Health Organization (WHO) emphasizes early recognition, prioritization, resuscitation, and timely definitive care as essential components of effective emergency care systems [1]. Acuity-based triage sorts patients according to the urgency of intervention rather than order of arrival, enabling patients with the greatest immediate needs to receive care first [2]. In 2026, WHO also introduced a standardized Data Set for Emergency Care to support consistent documentation, monitoring, evaluation, and quality improvement across emergency units [3].

Nurses have a central role in the initial and ongoing assessment of emergency patients. Triage decisions require simultaneous interpretation of presenting complaints, physiological findings, risk indicators, and the broader clinical situation. A recent systematic review found that emergency nurses combine holistic reasoning, situational awareness, knowledge, and experience when determining patient acuity [4]. Accurate monitoring of vital signs and recognition of deterioration are likewise fundamental to patient safety in emergency settings [5].

Beyond triage, the nursing process requires the translation of assessment findings into nursing diagnoses that guide outcomes and interventions. Standardized nursing terminology can improve

communication, consistency, and the traceability of nursing care. Recent emergency-care research has demonstrated the feasibility and value of mapping standardized nursing diagnoses, outcomes, and interventions in acute clinical settings [6,7]. Descriptive epidemiological studies remain particularly useful for identifying the pattern of nursing needs within emergency services and for informing education, staffing, clinical protocols, and quality improvement [8].

Local evidence describing the combination of patient characteristics, clinical status, triage level, and priority nursing diagnoses is still needed because the case mix of each emergency department may differ. Therefore, this study aimed to describe the demographic and clinical characteristics, triage levels, selected nursing care indicators, and priority nursing diagnoses among patients treated in an emergency department in April 2026.

2. METHODOLOGY

This study used a retrospective descriptive design based on secondary hospital data. The analytic dataset consisted of 57 de-identified patient records from an emergency department during April 2026. All 57 records available in the supplied dataset were included in the descriptive analysis. The data were gathered during a student clinical placement at Ridwan Meuraksa Hospital, an institution situated in East Jakarta.

Variables analyzed were age category, sex, education, medical diagnosis, triage level, Glasgow Coma Scale (GCS), airway patency, airway obstruction, abnormal breath sounds, respiratory rate, dyspnea, oxygen saturation, pulse, capillary refill time, blood pressure, hypovolemia indicator, dry mucosa, fluid intake and output, temperature, hyperthermia, trauma/wound status, intravenous fluid administration, antipyretic administration, education, improvement in pulse and temperature, fluid status, emergency department length of stay, disposition, and priority nursing diagnosis.

Data cleaning was performed before analysis. Triage codes were standardized for letter case (e.g., p2 to P2). Obvious spelling variations in priority nursing diagnoses were harmonized without changing their clinical meaning (e.g., 'hipovolema' to 'hypovolemia' and spelling variations of ineffective airway clearance and hyperthermia). Records containing more than one priority diagnosis were retained as a separate 'multiple priority diagnoses' category, and missing diagnosis information was reported rather than imputed. A non-standard dyspnea entry was not recoded for the dyspnea frequency calculation.

Categorical variables were summarized as frequency and percentage. Continuous variables were summarized using mean, standard deviation (SD), median, minimum, and maximum. The analysis was descriptive; no hypothesis testing was performed. Ethical approval and institutional permission details should be inserted before submission: [Ethics Committee name, approval number, and date]. Because this analysis used secondary de-identified records, no patient-identifying information is reported.

3. RESULTS

A total of 57 emergency department patient records were analyzed. More than half of the patients were older than 41 years (54.4%), 56.1% were female, and 68.4% had completed senior high school. Triage P2 represented the largest acuity group (77.2%), followed by P3 (21.1%) and P1 (1.8%).

Table 1. *Demographic characteristics and triage level (n=57)*

Characteristic	n	%
Age 20–30 years	11	19.3
Age 31–40 years	15	26.3
Age >41 years	31	54.4

Male	25	43.9
Female	32	56.1
Junior high school	7	12.3
Senior high school	39	68.4
Higher education	11	19.3
Triage P1	1	1.8
Triage P2	44	77.2
Triage P3	12	21.1

Initial assessment showed that 89.5% of patients had a patent airway and 10.5% had documented airway obstruction. Abnormal breath sounds were present in 21.1%. Eleven patients (19.3%) had a recorded hypovolemia indicator, while dry mucosa was documented in 43.9%. Hyperthermia was present in 36.8%. Intravenous fluid therapy was recorded for all patients, while education was documented for 96.5%. Improvement in pulse and temperature was recorded in 82.5% and 78.9% of patients, respectively.

***Table 2**. Selected clinical assessment and nursing care indicators (n=57)*

Indicator	n	%
Patent airway	51	89.5
Airway obstruction	6	10.5
Abnormal breath sounds	12	21.1
Hypovolemia indicator	11	19.3
Dry mucosa	25	43.9
Hyperthermia	21	36.8
Trauma/wound	2	3.5
Intravenous fluid administered	57	100.0
Patient/family education documented	55	96.5
Pulse improvement documented	47	82.5
Temperature improvement documented	45	78.9
Fluid status: poor	1	1.8
Fluid status: moderate	29	50.9
Fluid status: good	27	47.4

The mean respiratory rate was 23.16 breaths/min, mean oxygen saturation was 95.21%, and mean pulse rate was 100.02 beats/min. The mean systolic and diastolic blood pressures were 129.61 and 78.77 mmHg, respectively. The mean temperature was 37.05°C. Emergency department length of stay averaged 4.91 hours, with a median of 5 hours and a range of 1–8 hours. The very low minimum diastolic blood pressure in the source dataset should be verified against the original medical record before final submission.

Table 3. *Physiological parameters and emergency department length of stay*

Variable	Mean ± SD	Median	Min–Max
Respiratory rate (breaths/min)	23.16 ± 4.07	22	17–38
SpO_2 (%)	95.21 ± 4.89	98	70–99
Pulse (beats/min)	100.02 ± 18.43	102	64–141
Systolic blood pressure (mmHg)	129.61 ± 33.40	130	55–209
Diastolic blood pressure (mmHg)	78.77 ± 21.41	80	8–133
Temperature (°C)	37.05 ± 0.88	36.7	36.0–39.8
ED length of stay (hours)	4.91 ± 1.63	5	1–8

After harmonizing obvious spelling variations, hypovolemia was the most frequent priority nursing diagnosis (21.1%), followed by acute pain (19.3%). Ineffective airway clearance and ineffective breathing pattern each accounted for 12.3%. Risk for ineffective cerebral tissue perfusion was documented in 7.0%. Two records contained more than one priority diagnosis and one record had no priority diagnosis documented.

Table 4. *Distribution of priority nursing diagnoses (n=57)*

Priority nursing diagnosis	n	%
Hypovolemia	12	21.1
Acute pain	11	19.3
Ineffective airway clearance	7	12.3
Ineffective breathing pattern	7	12.3
Risk for ineffective cerebral tissue perfusion	4	7.0
Hyperthermia	3	5.3
Risk for hypovolemia	3	5.3
Unstable blood glucose level	2	3.5
Multiple priority diagnoses	2	3.5
Decreased cardiac output	1	1.8

Diarrhea	1	1.8
Impaired spontaneous circulation	1	1.8
Risk for ineffective peripheral tissue perfusion	1	1.8
Urge urinary incontinence	1	1.8
Not documented	1	1.8

4. DISCUSSION

The present study provides a clinically focused description of emergency-department nursing needs in a cohort of 57 patients. The predominance of P2 triage (77.2%) indicates that most patients required timely assessment and intervention rather than routine low-acuity care. This pattern is important because triage is not merely an administrative sorting process; it is an early clinical-risk decision that determines the urgency of assessment, monitoring, and treatment. The World Health Organization defines acuity-based triage as prioritization according to the estimated urgency for intervention [2]. Contemporary evidence also shows that emergency nurses integrate physiological findings, presenting symptoms, prior knowledge, clinical experience, and situational awareness when assigning acuity [4]. An evidence-based review of emergency-nurse triage accuracy further reported that accuracy is influenced by nurse characteristics, patient characteristics, and the work environment, with reported accuracy varying substantially across studies [11]. Therefore, the high proportion of P2 cases in the present dataset should be interpreted as a marker of a clinically demanding case mix that requires competent triage and repeated reassessment rather than as an isolated categorical finding.

The physiological findings support this interpretation. Although 89.5% of patients had a patent airway, 10.5% had documented airway obstruction and 21.1% had abnormal breath sounds. Mean respiratory rate was 23.16 breaths/min and oxygen saturation ranged from 70% to 99%, demonstrating substantial variability in respiratory status. Emergency-department monitoring must be individualized because monitoring requirements change as patient condition and clinical circumstances evolve. Connell et al. developed a multidisciplinary consensus statement for vital-sign monitoring in emergency departments and emphasized that monitoring frequency and parameters should reflect the patient's clinical context and risk [5]. These findings reinforce the nursing responsibility to connect triage classification with serial assessment rather than treating triage as a one-time decision. Training is also relevant: a scoping review of triage education found considerable heterogeneity in training approaches and outcome measures, highlighting the need for structured competency development and reliable evaluation of triage performance [12].

A central finding of this study is the distribution of priority nursing diagnoses. Hypovolemia was the most frequently documented priority diagnosis (21.1%), followed by acute pain (19.3%), ineffective airway clearance (12.3%), ineffective breathing pattern (12.3%), and risk for ineffective cerebral tissue perfusion (7.0%). This distribution demonstrates that emergency nursing priorities are not interchangeable with medical diagnoses. Nursing diagnoses represent clinical judgments about human responses, risks, and care needs that can require autonomous or collaborative nursing action. The current NANDA-I classification explicitly strengthens the linkage between systematic assessment, diagnostic reasoning, and nursing diagnosis, and emphasizes the use of assessment frameworks to improve diagnostic accuracy [10]. In the emergency setting, where information is often incomplete and time-sensitive, standardized diagnostic terminology can make nursing reasoning more visible, reproducible, and communicable across clinicians and shifts.

The prominence of hypovolemia is particularly noteworthy. In the present dataset, hypovolemia as a priority nursing diagnosis coexisted with other fluid-related findings: 19.3% of patients had a recorded hypovolemia indicator, 43.9% had dry mucosa, and 50.9% were categorized as having moderate fluid status. These findings suggest that fluid-balance problems constituted a substantial component of the nursing workload. From a diagnostic perspective, hypovolemia should not be inferred from a single sign; it requires integration of history, physical findings, hemodynamic status, fluid losses, intake-output

information, and the overall clinical context [10]. Contemporary fluid-management literature likewise cautions against assuming that static clinical variables alone reliably predict benefit from fluid administration. A systematic review and meta-analysis of variables influencing fluid responsiveness found that the performance of dynamic tests varies according to patient and measurement characteristics [17]. Thus, the finding that all patients in this dataset received intravenous fluids should be described as a care-process observation, not evidence that all patients were objectively fluid responsive. The descriptive design also precludes attributing subsequent pulse or temperature improvement to intravenous fluid therapy.

The second most frequent diagnosis, acute pain (19.3%), is also consistent with the broader emergency-care literature. In a large retrospective study of 28,847 prehospital emergency episodes, Romero-Sánchez et al. found that acute pain was among five NANDA-I diagnoses accounting for the great majority of documented diagnoses, together with risk for falls, anxiety, fear, and ineffective breathing pattern [7]. Although the prehospital population and health system differ from the present hospital-based cohort, the recurrence of acute pain across emergency-care settings supports its relevance as a core nursing problem. Pain management in emergency departments remains challenging because crowding, competing priorities, reassessment demands, and variability in clinical presentation can contribute to undertreatment. Recent implementation research has identified contextual barriers to best-practice acute-pain management in emergency departments [15], while a 2024 systematic review emphasized that pain is multidimensional and that assessment strategy can influence judgments about analgesic requirements [16]. Consequently, identifying acute pain as a priority nursing diagnosis should be followed by structured assessment, timely intervention, and documented reassessment rather than by a single pain score alone.

Respiratory nursing diagnoses were another prominent pattern. Ineffective airway clearance and ineffective breathing pattern each occurred in 12.3% of patients; considered together, respiratory diagnoses represented an important share of the documented nursing priorities. This finding is clinically plausible given the observed airway obstruction, abnormal breath sounds, elevated respiratory rates, and episodes of reduced oxygen saturation. Importantly, ineffective airway clearance and ineffective breathing pattern describe different clinical responses and should not be used interchangeably. The first concerns the patient's ability to clear secretions or obstruction from the respiratory tract, whereas the second concerns ventilation through the pattern of inspiration and/or expiration; both require assessment-based diagnostic reasoning within the current standardized taxonomy [10]. The large emergency-care record review by Romero-Sánchez et al. similarly identified ineffective breathing pattern among the most prevalent NANDA-I diagnoses [7]. The convergence between their large prehospital dataset and the present smaller hospital cohort strengthens the interpretation that respiratory-pattern problems are recurring nursing priorities across the emergency-care continuum, even though prevalence estimates cannot be directly compared because of differences in population, setting, documentation systems, and diagnostic practices.

Risk for ineffective cerebral tissue perfusion was documented in 7.0% of records. Although less frequent than fluid, pain, and respiratory diagnoses, this diagnosis is clinically important because neurological deterioration can be time-sensitive and may occur in patients with stroke, altered consciousness, hemodynamic instability, or other acute neurological conditions. In a descriptive study such as this, the diagnosis should be interpreted as a documented nursing risk judgment rather than proof of impaired cerebral perfusion. Its presence nevertheless highlights the need for serial neurological assessment, including level of consciousness and other relevant neurological observations, integrated with triage and vital-sign monitoring. This is consistent with the broader principle that emergency nursing diagnoses should emerge from repeated assessment as patient status changes, rather than remain static after the initial encounter [5,10].

The pattern of diagnoses in this study can also be compared with recent work specifically addressing standardized nursing terminology in emergency services. Queiroz et al. mapped and validated standardized nursing terminology for adult clinical-surgical emergency care and validated 29 diagnosis-outcome-intervention linkages, comprising 16 problem-focused diagnoses, 12 risk diagnoses, and one syndrome diagnosis, together with 26 nursing outcomes, 96 interventions, and 281 nursing activities [6]. Their findings demonstrate that emergency nursing can be represented systematically through standardized diagnostic, outcome, and intervention language despite the complexity and speed of the setting. Similarly, the large retrospective study by Romero-Sánchez et al.

showed that nursing diagnoses recorded in electronic emergency records can be analyzed for prevalence and clustering, thereby revealing patterns of patient needs that are not captured by medical diagnosis alone [7]. The present study adds a local hospital-based profile in which fluid-volume, pain, respiratory, and neurological-risk diagnoses were particularly visible.

Standardized nursing language has implications beyond terminology. A systematic review and meta-analysis by Bertocchi et al. examined 53 reports and found that standardized nursing terminologies, particularly NANDA-NIC-NOC and the Omaha System, were associated in the literature with several patient and organizational outcomes, although the authors cautioned that heterogeneity and risk of bias limited definitive conclusions [13]. A systematic review from Indonesia likewise concluded that standardized nursing language can strengthen documentation and communication, while identifying differences in nurses' knowledge, awareness, and implementation across settings [14]. More recent emergency-specific validation work has further shown that standardized terminology can improve the consistency and efficiency of linking diagnoses, outcomes, and interventions [6]. These findings are directly relevant to the present dataset because spelling variations and inconsistent entries were found during data cleaning. Such variation is not a trivial technical issue: inconsistent diagnostic labels reduce the reliability of clinical communication, quality measurement, secondary-data analysis, and future interoperability with electronic health records.

The documentation of patient/family education in 96.5% of records and recorded improvement in pulse and temperature in 82.5% and 78.9%, respectively, suggests that the dataset also contains potentially useful nursing-sensitive process and outcome information. However, these variables should not yet be treated as validated quality indicators. Mustonen et al. identified 85 nursing quality indicators in adult emergency nursing across structure, process, and outcome domains, but also reported limited validation of many indicators [9]. Therefore, future work should establish explicit operational definitions, timing of measurement, denominators, and criteria for improvement before using variables such as education, pulse improvement, or temperature improvement for benchmarking. The WHO Data Set for Emergency Care similarly emphasizes standardized data elements to support monitoring, evaluation, and quality improvement across emergency-care systems [3].

The study also has implications for nursing education and clinical governance. The observed diagnostic profile suggests that emergency nurses require strong competencies in fluid assessment, pain assessment, airway and breathing evaluation, neurological surveillance, and prioritization. Triage education should be integrated with diagnostic reasoning rather than taught as an isolated scoring exercise. Evidence indicates that triage decision-making is influenced by both clinician experience and environmental pressures [4,11], while standardized nursing terminology provides a framework for translating assessment findings into explicit nursing problems and care plans [6,10,13]. For clinical services, periodic audit of the most frequent nursing diagnoses may help align continuing education, emergency protocols, documentation templates, and nursing resources with the actual pattern of patient needs.

Several limitations must be considered when interpreting these findings. First, the sample was small (n=57), derived from a single emergency department and a single month, which limits generalizability and makes the results sensitive to short-term variation in case mix. Second, this was a retrospective secondary-data analysis; consequently, the findings reflect what was documented rather than the complete clinical condition of each patient. Third, inconsistent capitalization, spelling, units, and several non-standard entries required data cleaning, and some extreme physiological or laboratory values should be verified against the source medical records. Fourth, the dataset did not permit independent validation of whether each nursing diagnosis met all defining characteristics or risk criteria in the current classification [10]. Fifth, because the design was descriptive, no causal or predictive conclusions can be drawn regarding relationships among triage level, interventions, nursing diagnoses, or outcomes. Future studies should use larger samples, prospective or multicenter designs, explicit diagnostic criteria, and inferential analyses to examine associations between triage, clinical indicators, nursing diagnoses, interventions, and patient outcomes.

5. CONCLUSIONS

Patients treated in the emergency department during April 2026 showed diverse acute care needs, with most classified as triage P2. Fluid balance, pain, and respiratory problems were prominent nursing priorities. Hypovolemia was the most frequent priority nursing diagnosis, followed by acute pain, ineffective airway clearance, and ineffective breathing pattern. The findings support the use of systematic assessment, repeated physiological monitoring, and standardized nursing diagnoses to organize emergency nursing care. Further analytic studies with larger samples and verified clinical data are recommended to examine relationships between triage, clinical indicators, nursing diagnoses, interventions, and patient outcomes.

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