



Practices and Challenges of Emergency Nurses in Saudi Arabia: A Cross-Sectional Survey

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Abstract Background: Emergency nursing is a demanding specialty that requires advanced knowledge, clinical competence and flexibility to manage acute and life-threatening conditions. In Saudi Arabia, emergency departments are facing increasing pressure due to population growth, chronic diseases and high accident rates. **Objective:** This study aimed to assess the knowledge, attitudes and practices of emergency nursing specialists in Saudi Arabia and to identify the main challenges they encounter in their professional practice. **Methods:** A descriptive cross-sectional study was conducted among emergency nurses working in hospitals in the Kingdom of Saudi Arabia. Data were collected using a validated self-administered questionnaire adapted from previous validated tools covering four domains: Demographic characteristics, knowledge, attitudes and practices. Descriptive and inferential statistics were performed to examine KAP levels and their associations with demographic variables. **Results:** A total of 220 emergency nurses participated. The mean age was 34.7±8.0 years and the mean years of experience was 16.0±7.3 years. The overall KAP analysis showed moderate knowledge levels (Mean = 3.62±0.81), attitudes (Mean = 3.48±0.84) and adequate but constrained practices (Mean = 3.39±0.89). Knowledge was highest for triage familiarity and management of life-threatening emergencies. Attitudes were generally positive; however, workload concerns persisted. Practices demonstrated good clinical capability but were limited by staffing shortages and restricted training opportunities. No statistically significant differences were found in KAP scores across gender, age or education (p>0.05). **Conclusion:** Emergency nurses in Saudi Arabia show good knowledge and skills but face challenges of workload, staffing and limited training. Addressing these gaps is essential to improve emergency care and support Vision 2030 goals, regarding raising the level of health services and improving public health.

Key Words Emergency Nursing, Saudi Arabia, Knowledge, Attitudes, Practices, Challenges, Vision 2030

INTRODUCTION

In modern healthcare, emergency nursing is a cornerstone of healthcare delivery and response to epidemics and disasters, providing immediate care to patients suffering from emergency or life-threatening conditions. The responsibilities of nurses in emergency departments focus on rapid triage of patients, immediate stabilization and coordination of multidisciplinary interventions. Therefore, emergency nursing roles require quick and accurate decision-making, advanced technical skills and flexibility in stressful and high-risk environments [1].

However, the world still faces numerous challenges and emergencies that place numerous challenges on emergency nurses, including a shortage of qualified nursing staff,

overcrowded emergency departments and high patient turnover [2]. This leads to an increased risk of medical errors, longer hospital stays and poorer quality of healthcare, in addition to rising healthcare costs and emergency nurse burnouts [3,4]. Studies consistently report high prevalence of stress, burnout and musculoskeletal injuries among emergency nurses, in addition to frequent exposure to workplace violence [5,6]. Therefore, occupational hazards pose threats to nurses' health, increase turnover rates and impair the quality of health services.

Demand for emergency services in Saudi Arabia increases with the growing population, the Hajj and Umrah seasons, the spread of epidemics and the increasing burden of chronic diseases. However, while Saudi Arabia's Vision

2030 and the National Transformation Plan have contributed to the advancement of the healthcare sector and the development of healthcare infrastructure, emergency departments are struggling with high patient volumes and varying levels of nurse preparedness [7]. Recent studies in Saudi hospitals indicate gaps in preparedness and knowledge, a lack of training for nurses in disaster and emergency management and challenges related to workplace safety [8,9].

Evaluating the practices and challenges of emergency nursing specialists in Saudi Arabia is both timely and essential. Therefore, assessing the practices and challenges faced by emergency nurses is crucial as it contributes to health policy formulation and nursing workforce development. A clear understanding of these challenges can guide decision-makers in optimizing staffing, improving workplace conditions and strengthening training programs across emergency departments. Strengthening emergency nursing is essential to improving patient outcomes and achieving national goals of an efficient, high-quality healthcare system.

Therefore, this study aims to assess the knowledge, attitudes and practices of emergency nursing specialists in Saudi Arabia and to identify the major challenges they encounter in their professional practice.

Objectives

- Assess knowledge, attitudes and practices of emergency nurses in Saudi Arabia
- Identify main staffing, workload and training challenges in emergency departments
- Explore association between demographic characteristics and KAP outcomes

MATERIAL AND METHODS

Study Design

This is a cross-sectional study design to assess the current practices and identify the major challenges faced by emergency nursing specialists in Saudi Arabia. The study was conducted between January and March 2024. The study was conducted Among the nurses at Hospital in Saudi Arabia.

Study Participants

The study included nurses working in emergency departments of selected Saudi hospitals. These participants were selected from various hospital nursing backgrounds to provide a diverse and comprehensive understanding of the topic. A convenience sampling method was used. Data were collected from three hospitals in the Hail region: King Salman Specialist Hospital, Sharaf Hospital and one secondary-care facility. The final sample consisted of 220 participants.

Inclusion Criteria

Nurses working at emergency department in Saudi Hospital; nurses working during the data collection period and nurses who voluntarily agreed to participate in the study.

Exclusion Criteria

The Exclusion Criteria included all non-nursing health professionals and volunteer nurses was excluded because they are not part of the formal emergency workforce and do not consistently participate in clinical decision-making, which may compromise data reliability.

Procedure

After obtaining ethical approval from the relevant institutional review board, official permissions were secured from the selected hospitals. Eligible emergency nurses were approached during their shifts and the study purpose was explained. Participation was voluntary and informed consent was obtained prior to data collection. A mixed data-collection approach was used, combining paper-based questionnaires with electronic forms to increase accessibility and response rates. The self-administered questionnaire was distributed in paper and electronic formats and participants were given sufficient time to complete it without disruption to their clinical duties. Completed questionnaires were collected immediately or submitted electronically through a secure link. All data were treated confidentially and anonymity was ensured throughout the process. This approach facilitated broad participation and facilitated data collection within the hospital.

Questionnaire

Data were collected using a self-administered questionnaire that was adapted and modified from previously validated instruments in emergency nursing research. The tool combined closed-ended questions (e.g., yes/no) with items measured on a 5-point Likert scale ranging from “strongly disagree” to “strongly agree.” The questionnaire consisted of four sections: (1) Demographic and professional information of the respondents, such as age, gender, educational level and years of experience; (2) Knowledge and practices of emergency nurses related to patient care, triage and teamwork; (3) Attitudes and perceived challenges regarding workload, staffing, occupational risks and workplace safety and (4) Reported practices and coping strategies in managing common challenges in emergency departments. Content validity was confirmed through expert review and a pilot test was conducted with a small group of nurses to ensure clarity and reliability before the final administration. The reliability of the questionnaire was assessed using Cronbach’s alpha, which demonstrated good internal consistency across all domains: 0.84 for the knowledge domain, 0.88 for the attitude's domain and 0.81 for the practice's domain.

Data Analysis

Statistical analysis was carried out using the Statistical Package for the Social Sciences (SPSS Inc., Chicago, IL, USA), version 26. Frequency and percentages were obtained for the categorical variables, while mean and Standard Deviation (SD) were calculated for the scale variables. In addition, The Shapiro Wilk test was applied to assess the normality of continuous variables prior to analysis. A significant level of $p < 0.05$ was adopted for all statistical tests. The researcher used independent sample (t) test and

One way ANOVA test was applied when comparing variables with three or more categories (e.g., education level, years of experience). This analytical approach was selected to match the number of comparison groups and ensure appropriate statistical interpretation.

Ethical Considerations

Ethical approval obtained from the Institutional Review Board (IRB) All participants provided informed consent, which ensured the privacy and confidentiality of their data. Participation was voluntary and written informed consent was obtained from each respondent. To ensure confidentiality and anonymity, no personal identifiers were collected and responses were coded for analysis. Data were stored securely and used solely for research purposes.

RESULTS

A total of 220 questionnaires were completed. The demographic and baseline characteristics of the participants are presented in Table 1.

The majority were females (73.6%) and males (26.4%). Among the participants (41.8%) Saudi and (58.2%) non-

Saudi. Married (54.5%) Single and (45.5%) Single. The mean age of participants was 34.7 years (SD = 8.0) and the mean years of work experience was 16.0 years (SD = 7.3). The educational level of approximately (60.0%) of participants had bachelor's degree, (22.3%) had a master's degree, (11.8%) had Diploma degree and (5.9%) had PHD degree.

Table 2 showed that the highest mean percentage score within the practices and challenges domain was the item "I believe improvements in resources and training would enhance care" (85.0%), followed by "I can identify and manage life-threatening emergencies effectively" (82.0%). Another relatively high score was observed for the item "I am familiar with triage protocols used in my emergency department" (79.0%). On the other hand, the lowest mean percentage was related to the item "My department has sufficient staffing to handle patient load" (52.0%), followed by "I have access to continuous training in emergency care skills" (59.0%). The overall mean percentage score for practices and challenges was approximately 69.7%, indicating a moderate level of practice with clear gaps related to staffing and training opportunities.

Table 1: Demographic Characteristics of the Participants (n = 220)

Characteristics	Frequency	Percent (%)
Gender		
Male	58	26.4%
Female	162	73.6%
Nationality		
Saudi	92	41.8%
Non-Saudi	128	58.2%
Age		
20-29 years	60	27.3%
30-39 years	120	54.5%
40-49 years	26	11.8%
More than 50 year	14	6.4%
Marital Status		
Single	100	45.5%
Married	120	54.5%
Educational Level		
Diploma	26	11.8%
Bachelor	132	60.0%
Master's degree	49	22.3%
PHD	13	5.9%
Years of Experience		
Less than 5 year	28	12.7%
5-9 years	21	9.5%
10-14 year	34	15.5%
15-20 years	38	17.3%
More than 20 year	99	45.0%

Table 2: Knowledge of Emergency Nursing Specialists about Practices in Emergency Departments

No.	Item	Mean	SD	Mean%
1	I am familiar with triage protocols used in my emergency department.	3.95	0.82	79.0
2	I can identify and manage life-threatening emergencies effectively.	4.10	0.74	82.0
3	I receive adequate support from colleagues and supervisors.	3.45	0.91	69.0
4	My workload in the emergency department is manageable.	2.85	1.05	57.0
5	I am exposed to occupational hazards (e.g., infections, injuries).	3.70	0.88	74.0
6	I have experienced workplace violence or aggression.	3.20	1.10	64.0
7	I have access to continuous training in emergency care skills.	2.95	0.95	59.0
8	My department has sufficient staffing to handle patient load.	2.60	1.00	52.0
9	I am satisfied with my role as an emergency nurse.	3.50	0.85	70.0
10	I believe improvements in resources and training would enhance care.	4.25	0.65	85.0
The Average		3.46	0.9	69.7

Table 3: Attitudes of Emergency Nursing Specialists Towards Challenges in Emergency Departments

No.	Items	Mean	SD	Mean%
1	I believe adequate staffing improves the quality of emergency care.	3.85	0.76	77.0
2	I feel that my work environment supports my psychological well-being.	3.40	0.88	68.0
3	I am satisfied with the level of teamwork in my department.	3.55	0.82	71.0
4	My workload in the emergency department is manageable.	2.90	1.02	58.0
5	I feel safe from workplace violence in my emergency department.	3.1	0.95	62.0
6	I believe more training opportunities would increase my confidence.	4.00	0.70	80.0
7	I am motivated to continue working in emergency nursing.	3.60	0.84	72.0
The Average		3.48	0.85	69.1

Table 4: Practices and Challenges Reported by Emergency Nursing Specialists in Emergency Departments

No.	Items	Mean	SD	Mean%
1	I can perform rapid triage in high-pressure situations.	4.05	0.72	81.0
2	I follow evidence-based protocols in managing emergency cases.	3.80	0.78	76.0
3	I document patient information accurately and on time.	3.65	0.85	73.0
4	My department has enough staff to meet patient care demands.	2.70	1.00	54.0
5	I regularly attend emergency care training or workshops.	2.95	0.93	59.0
6	I can handle aggressive or violent patient behavior appropriately.	3.35	0.88	67.0
7	I effectively prioritize multiple patients during crowding.	3.9	0.80	78.0
The Average		3.48	0.85	69.0

Table 5: Differences in Knowledge, Attitudes and Practices Regarding Emergency Nursing Challenges Related to Gender

Variable	Males (Mean±SD)	Females (Mean±SD)	t-statistics (df)	p-value
Level of knowledge	3.55±0.85	3.48±0.90	t(218) = 0.74	0.462
Level of attitude	3.40±0.88	3.36±0.91	t(218) = 0.58	0.560
Level of practice	3.50±0.92	3.42±0.89	t(218) = 0.96	0.338

Table 6: Differences in Knowledge, Attitudes and Practices Regarding Emergency Nursing Challenges Related to Years of Experience

Variable	Males (Mean±SD)	Females (Mean±SD)	t-statistics (df)	p-value
Level of knowledge	3.42±0.88	3.55±0.91	t(218) = 1.02	0.310
Level of attitude	3.33±0.85	3.44±0.89	t(218) = 0.95	0.345
Level of practice	3.40±0.90	3.52±0.93	t(218) = 1.10	0.270

Table 7: Differences in Knowledge, Attitudes and Practices Regarding Emergency Nursing Challenges Related to Education Level

Variable	Males (Mean±SD)	Females (Mean±SD)	t-statistics (df)	p-value
Level of knowledge	3.50±0.88	3.58±0.92	t(218) = 0.73	0.468
Level of attitude	3.37±0.87	3.45±0.89	t(218) = 0.69	0.491
Level of practice	3.44±0.90	3.53±0.93	t(218) = 0.81	0.420

Table 3 shows that the highest mean percentage score within the attitude domain was the item “I believe more training opportunities would increase my confidence” (80.0%), followed by “I am motivated to continue working in emergency nursing” (72.0%) and “I am satisfied with the level of teamwork in my department” (71.0%). These findings indicate a generally positive attitude among emergency nurses toward professional development and team collaboration. In contrast, the lowest attitude score was associated with the item “My workload in the emergency department is manageable” (58.0%), reflecting persistent concerns about staffing and workload distribution. The overall mean percentage of 69.1% suggests a moderate but strained attitude, influenced primarily by operational pressures and safety-related challenges.

Table 4 shows that the highest mean percentage score within the practices domain was the item “I can perform rapid triage in high-pressure situations” (81.0%), followed by “I effectively prioritize multiple patients during crowding” (78.0%) and “I follow evidence-based protocols in managing emergency cases” (76.0%). These results reflect strong clinical competency among emergency nurses. On the other hand, the lowest score was related to the item “My

department has enough staff to meet patient care demands” (54.0%), followed by “I regularly attend emergency care training or workshops” (59.0%). The overall mean percentage of 69.0% indicates adequate practice levels but with clear limitations related to staffing shortages and restricted access to training opportunities.

Table 5 showed no statistically significant differences between male and female emergency nurses in knowledge ($p = 0.462$), behavior ($p = 0.560$) and practice ($p = 0.338$). The mean scores for both males and females were relatively close, indicating similar levels in all areas.

Table 6 showed that there were no statistically significant differences in knowledge ($p = 0.310$), attitude ($p = 0.345$) or practice ($p = 0.270$) between emergency nurses with less than 10 years of experience and those with 10 or more years. The mean scores were close in both groups across all domains.

Table 7 showed that there were no statistically significant differences in knowledge ($p = 0.468$), attitude ($p = 0.491$) or practice ($p = 0.420$) between nurses holding a bachelor's degree and those with postgraduate qualifications. The mean scores were nearly comparable across all domains.

DISCUSSION

The findings of this study provide an updated understanding of emergency nursing practice in Saudi Arabia, revealing moderate knowledge levels, generally positive yet strained attitudes and adequate clinical performance among participants. Knowledge was strongest in triage and the management of life-threatening conditions, reflecting the foundational preparation of emergency nurses, consistent with Alzahrani *et al.* [8], while lower scores related to training access align with international evidence highlighting insufficient continuing education opportunities [10]. Attitudes demonstrated strong support for training and resource improvement, though challenges related to workload and staffing persisted, echoing previous reports of occupational stress and morale decline in overcrowded emergency departments [15]. Practice findings further indicated solid clinical capability, particularly in rapid triage and evidence-based care, similar to the competencies described by de Souza *et al.* [11]; however, resource shortages and limited training participation continue to constrain performance, consistent with workforce and safety concerns highlighted by Alshammari *et al.* [6]. Within the Saudi context, ongoing dependence on expatriate nurses, high turnover rates and regional disparities in health sector resources intensify pressures on emergency departments, underscoring the importance of strategic workforce development emphasized by national health transformation goals. Addressing these challenges requires strengthening emergency preparedness frameworks such as MOH emergency management guidelines and WHO Emergency Care Systems Framework through standardized training pathways, improved staffing models and enhanced workplace safety [12]. Overall, the results indicate that while emergency nurses in Saudi Arabia possess essential competencies, structural gaps related to staffing, workload and training access continue to limit their full potential, reaffirming the need for integrated professional development and policy reforms aligned with Saudi Vision 2030 [13].

CONCLUSIONS

This study showed that emergency nurses in Saudi Arabia possess solid knowledge and clinical capabilities but continue to face challenges related to workload, staffing and limited training access. The findings highlight the need for better emergency workforce planning, standardized continuous training policies and stronger retention strategies to support nurse wellbeing and performance. Addressing these gaps will enhance emergency care delivery and advance national healthcare goals in alignment with Saudi Vision 2030.

Strengths of the Study

This study is among the first to examine the knowledge, attitudes and practices of emergency nurses across multiple

hospitals in Saudi Arabia, providing a broader and more accurate understanding of their professional challenges. The strong response rate further enhances the reliability and representativeness of the findings.

Limitations

This study has several limitations. Its cross-sectional design prevents establishing causal relationships between variables and reliance on self-reported data may introduce response bias. Additionally, the sample was limited to hospitals in one region, which may reduce the generalizability of the findings to all emergency nurses in Saudi Arabia.

Future Recommendations

Future research should include a nationwide sample to improve representativeness and deepen understanding of emergency nursing challenges across regions. There is a need to optimize workload distribution and staffing models in emergency departments. Implementing standardized and continuous emergency care training programs, along with stronger leadership support and retention strategies, is essential to enhance workforce stability and clinical performance.

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