

# The Attitudes of Emergency Department Nurses towards Patient Safety in Alqassim Region, Saudi Arabia: A Questionnaire-based Cross-sectional Study

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## ABSTRACT

**Introduction:** Patient safety is a crucial aspect of healthcare delivery, and nurses play a critical role in ensuring that patients receive safe and high-quality care. As healthcare systems continue to evolve, it is essential to understand the attitudes and perceptions of nurses towards patient safety.

**Aim:** To explore emergency department nurses' attitudes toward patient safety in the Alqassim region, Saudi Arabia.

**Materials and Methods:** This was a cross-sectional study involving 420 emergency department nurses from the hospitals of the Alqassim region, Saudi Arabia. The World Health Organisation (WHO) patient safety questionnaire, specifically tailored for nurses, was employed. Data analysis was conducted using Statistical Package for Social Sciences (SPSS) version 25.0.

**Results:** Total of 139 nurses out 420 completed the research. Most participants were males aged between 22 and 30 years, married, and held a Bachelor of Science in Nursing (BSN) degree. The overall average score for patient safety reached a moderate level, with a mean of  $118.66 \pm 23.33$ . The component on workplace safety had the highest average score of  $32.33 \pm 7.40$ , while the section on personal attitudes towards patient safety had the lowest average score of  $15.02 \pm 3.72$ .

**Conclusion:** Nurses exhibited moderate attitudes towards various aspects of patient safety, including error and patient safety, healthcare system safety, and personal attitudes towards patient safety. Enhancing patient safety measures is crucial for fostering a resilient safety culture in the healthcare sector.

**Keywords:** Communication in healthcare, Error reporting, Patient safety attitudes, Patient safety culture, Workplace

## INTRODUCTION

Ensuring patient safety is an essential element of the healthcare system [1]. Patient safety efforts aim to anticipate and prevent errors and reduce the likelihood of harm occurring to patients while they receive healthcare services. Continuous training and reinforcement are crucial to ensure healthcare professionals consistently follow patient safety guidelines, preventing adverse incidents [2]. Patient safety has emerged as a paramount concern within the healthcare landscape. The WHO articulates patient safety as "the absence of preventable harm to a patient and the reduction of the risk of it" [3]. Patient safety is the priority of healthcare professionals and can be considered the core of nursing care. Nurses comprise the largest group of healthcare personnel, significantly impacting the maintenance of uninterrupted care and promoting and preserving patients' health [4]. Nursing care is vital within the range of care provided in medical settings [5].

Emergency department nurses are generally aware of the importance of patient safety and are committed to ensuring that their patients receive safe and high-quality care. For example, a study conducted in Ontario, Canada found that emergency department nurses perceived patient safety as a key priority and emphasised the importance of communication, teamwork, and patient-centered care in achieving this goal [6]. Emergency nurses play a vital role in delivering safety to patients, especially as they are the ones who provide immediate and direct care to them [7]. Nurses identify factors linked to Medical Errors (MEs) and patient safety. It has been reported that nursing professionals, on certain occasions, are aware of MEs; however, due to hesitation and fear, they refrain from disclosing such incidents, jeopardising patient safety [8]. A study conducted in the Kingdom of Saudi Arabia (KSA) reported that MEs are prevalent in healthcare institutions, with an estimated overall prevalence of 44%. Specifically,

prescribing errors account for 40%, administration of drug errors for 32%, and provision errors for 28% [9]. A cross-sectional survey was conducted in the KSA, where more than 500 doctors and nurses were given a validated Safety Attitudes Questionnaire (SAQ). The average ratings for each dimension of the SAQ were found to be below 75%, indicating that, overall, nurses and doctors demonstrated safety attitudes that were less than positive. This pattern was particularly evident in the areas of identifying stress (58.1%) and evaluating hospital administration (56.9%). Additionally, nurses had significantly lower scores in the co-operation climate component compared to doctors ( $p$ -value  $< 0.01$ ) [10].

While several studies have examined patient safety attitudes among Saudi Arabian nurses [11,12], few have focused specifically on the unique perspectives and challenges faced by emergency department nurses in the Alqassim region [13,14]. The present study aimed to explore emergency department nurses' attitudes towards patient safety in the Alqassim region, Saudi Arabia. The study's objectives included determining the respondents' demographic characteristics and the extent of patient safety (error and patient safety, personal influence over safety, workplace safety of the healthcare system, and personal attitudes towards patient safety).

## MATERIALS AND METHODS

This cross-sectional study was conducted in all secondary/general hospitals in the Alqassim region, Saudi Arabia from April 2023 to September 2023. The study was approved by the Research Ethics Committee (REC) at the University of Hail (IRB # H-2023-281) before the research was conducted.

**Inclusion criteria:** The study participants were nurses working in the emergency department. Nurses working in the target hospitals in the Alqassim locale, Saudi Arabia, who had been working in the

target hospital for at least six months, and both expatriate and Saudi national nurses were included in the study, provided they met the first two criteria mentioned above.

**Exclusion criteria:** Healthcare professionals other than nurses, such as physicians, nurses working in hospitals not listed in the target hospitals of the current study, and nurses who were newly hired and had been working for less than six months, were excluded from the study.

**Sample size calculation:** The study used a convenience sampling approach to select the study participants. According to Raosoft (www.raosoft.com), the calculated sample size with a population of 1000 nurses, a 95% confidence interval, and a 5% margin of error was 278.

Study Procedure

The data collection process involved using the WHO medical school curricular guide for the patient safety questionnaire, with the term ‘doctors’ replaced by ‘nurses’ [15]. This questionnaire comprises five sections: ‘Error and patient safety’ (consisting of seven items), ‘Safety of the healthcare system’ (consisting of six items), ‘Personal influence over safety’ (consisting of seven items), ‘Personal attitudes to patient safety’ (consisting of four items), and a fifth section focusing on ‘safety at the workplace’ (consisting of nine items). Participants were asked to rate each topic on a five-point Likert scale, with one indicating ‘strongly disagree’ and five indicating ‘strongly agree’. Error and patient safety were measured by 7 items using the 5-point Likert scale from 5=high to 1=none. Personal influence over safety was measured by 7 items using the 5-point Likert scale from 5=strongly agree to 1=strongly disagree. Safety of the healthcare system was measured by 6 items using the 5-point Likert scale from 5=strongly agree to 1=strongly disagree. Personal attitudes to patient safety were measured by 4 items using the 5-point Likert scale from 5=strongly agree to 1=strongly disagree. The workplace safety assessment employed a 5-point Likert scale across 9 items (5=strongly agree to 1=strongly disagree).

According to this scale, an overall knowledge score between 33 and 66 is categorised as low. A cumulative score between 67 and 131 is classified as moderate, while a score between 132 and 165 is regarded as high [11].

**Data collection procedure:** Approvals from the Ministry of Health and hospital department heads were required to collect data for this original research. After approval, the researcher preoriented nurses in Qassim region hospitals. The session informed nurses about the study’s origins, goals, and relevance to nursing. Participants were selected based on availability and provided with contact information after the session. Participant consent forms indicated their voluntary participation and understanding of the risks and benefits. Subsequently, participants were instructed to visit a website to download and complete the WHO medical school curricular guide’s nurse-adapted patient safety questionnaire. After completion, participants submitted their responses online, making questionnaire retrieval easy for the researcher.

STATISTICAL ANALYSIS

Data was analysed utilising calculated frequencies, percentages, means and standard deviations by SPSS version 25.0.

Statement	None		Low		Average		Moderate		High		Mean±SD
Different types of human error?	7	5.04	15	10.79	42	30.22	44	31.65	31	22.30	3.55±1.10
Factors contributing to human error?	6	4.32	18	12.95	39	28.06	51	36.69	25	17.99	3.51±1.07
Factors influencing patient safety?	4	2.88	12	8.63	48	34.53	47	33.81	28	20.14	3.60±1.00
Ways of speaking up about error?	4	2.88	10	7.19	45	32.37	49	35.25	31	22.30	3.67±1.00
What should happen if an error is made?	9	6.47	12	8.63	37	26.62	55	39.57	26	18.71	3.55±1.09
How to report an error?	7	5.04	13	9.35	39	28.06	45	32.37	35	25.18	3.63±1.11
The role of healthcare organisations (e.g., hospitals, general practitioners) in error reporting?	6	4.32	14	10.07	37	26.62	55	39.57	27	19.42	3.60±1.05
Error and patient safety											25.12±5.78

Key: 7-14=low; 15-27=moderate; 28-35=high [11]

[Table/Fig-2]: Error and patient safety (N=139).

RESULTS

For the study conducted in the Alqassim region, Saudi Arabia, 420 nurses were initially recruited. Of these, 240 nurses responded; the response rate was 57.14%. However, data from only 139 nurses were analysed, as the data from 101 participants were either incomplete, had discrepancies, or had unrealistic information. Out of the 139 participants, the majority were male (n=82, 58.99%), between 22-30 years old (n=57, 41.01%), married (n=71, 51.08%), and had a BSN (n=76, 54.68%). Regarding weekly working hours, 50.36% (n=70) worked 48 hours or more. Additionally, 83.45% (n=116) of employees belonged to accredited hospitals [Table/Fig-1].

Factor		N (%)
Gender	Male	82 (58.99)
	Female	57 (41.01)
Age (years)	22-30	57 (41.01)
	31-40	55 (39.57)
	41-50	16 (11.51)
	>50	11 (7.91)
Marital status	Single	52 (37.41)
	Married	71 (51.08)
	Separated	16 (11.51)
Educational attainment	Diploma nursing graduate	23 (16.55)
	BSN graduate	76 (54.68)
	Postgraduate	40 (28.78)
Working hours	<48 h	69 (49.64)
	≥48 h	70 (50.36)
Experience	5 years or less	27 (19.42)
	6-10 years	47 (33.81)
	11-20 years	45 (32.38)
	>20 years	20 (14.39)
Primary working shift	Day shift	51 (36.69)
	Afternoon shift	33 (23.74)
	Night shift	17 (12.23)
	Alternate day, afternoon and night shift	38 (27.34)
Position	Staff nurse	95 (68.35)
	Manager/head nurse/supervisor	44 (31.65)
Is the hospital accredited	Yes	116 (83.45)
	No	23 (16.55)

[Table/Fig-1]: The socio-demographic characteristics (N=139).

The total mean score achieved a moderate level of error and patient safety (25.12±5.78). The item “Ways of speaking up about error?” achieved the highest mean score (3.67±1.00), while the item “Factors contributing to human error?” (3.51±1.07) had the lowest mean score [Table/Fig-2].

The total mean score achieved a moderate level (25.03±5.77). The item “I am able to talk about my own errors?” achieved the highest

mean score ( $3.83 \pm 0.98$ ), while the item "It is easier to find someone to blame rather than focus on the causes of error" ( $3.21 \pm 1.17$ ) had the lowest mean score [Table/Fig-3].

The workplace safety assessment revealed a moderate overall rating ( $32.33 \pm 7.40$ ). Among the items, "The doctors' commitment to identifying and addressing patient safety risks" received the highest mean score ( $3.71 \pm 1.10$ ). Conversely, "The doctors will not criticise me for making mistakes" scored the lowest ( $3.40 \pm 1.09$ ) [Table/Fig-4].

The total mean score achieved a moderate level of safety of the healthcare system ( $21.17 \pm 5.24$ ). The item "Healthcare staff receive

training in patient safety" achieved the highest mean score ( $3.74 \pm 1.02$ ), while the item "Most healthcare workers make errors" ( $3.27 \pm 1.27$ ) had the lowest mean score [Table/Fig-5].

The total mean score achieved a moderate level of personal attitudes to patient safety ( $15.02 \pm 3.72$ ). The item "If I keep learning from my mistakes, I can prevent incidents" achieved the highest mean score ( $3.83 \pm 1.03$ ), while the item "By concentrating on the causes of incidents, I can contribute to patient safety" ( $3.65 \pm 1.18$ ) had the lowest mean score [Table/Fig-6].

The total mean score achieved was in a moderate level of Patient Safety ( $118.66 \pm 23.33$ ) [Table/Fig-7].

Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		Mean $\pm$ SD
Telling others about an error I made would be easy	17	12.23	18	12.95	35	25.18	43	30.94	26	18.71	$3.31 \pm 1.26$
It is easier to find someone to blame rather than focus on the causes of error	12	8.63	29	20.86	34	24.46	46	33.09	18	12.95	$3.21 \pm 1.17$
I am confident about speaking to someone who is showing a lack of concern for a patient safety	9	6.47	23	16.55	28	20.14	48	34.53	31	22.30	$3.50 \pm 1.19$
I know how to talk to people who have made an error	7	5.04	11	7.91	31	22.30	64	46.04	26	18.71	$3.65 \pm 1.03$
I am always able to ensure that patient safety is not compromised	6	4.32	10	7.19	35	25.18	53	38.13	35	25.18	$3.73 \pm 1.06$
I believe that filling in reporting forms will help to improve patient safety	6	4.32	7	5.04	32	23.02	58	41.73	36	25.90	$3.80 \pm 1.02$
I am able to talk about my own errors	5	3.60	6	4.32	31	22.30	62	44.60	35	25.18	$3.83 \pm 0.98$
Personal influence over safety											<b><math>25.03 \pm 5.77</math></b>
Key: 11-22=low; 23-33=moderate; 34-55=high [11]											

[Table/Fig-3]: Personal influence over safety (N=139).

Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		Mean $\pm$ SD
The nurses will be committed to identifying and addressing patient safety risks	9	6.47	14	10.07	33	23.74	52	37.41	31	22.30	$3.59 \pm 1.13$
The nurses will not criticise me for making mistakes	9	6.47	19	13.67	26	18.71	55	39.57	30	21.58	$3.56 \pm 1.16$
The doctors will be committed to identifying and addressing patient safety risks	3	2.16	20	14.39	31	22.30	45	32.37	40	28.78	$3.71 \pm 1.10$
The doctors will not criticise me for making mistakes	8	5.76	21	15.11	37	26.62	53	38.13	20	14.39	$3.40 \pm 1.09$
Managers in the healthcare system will make it easy to report errors	6	4.32	15	10.79	41	29.50	47	33.81	30	21.58	$3.58 \pm 1.08$
Managers in the healthcare system will be more interested in meeting performance targets than in patient safety	6	4.32	18	12.95	36	25.90	50	35.97	29	20.86	$3.56 \pm 1.09$
Managers in the healthcare system will expect us to focus on patient safety	6	4.32	12	8.63	36	25.90	61	43.88	24	17.27	$3.61 \pm 1.01$
Being open and honest about the mistakes I make will be acceptable at my place of work	4	2.88	14	10.07	34	24.46	59	42.45	28	20.14	$3.67 \pm 1.00$
Admitting an error I had made would lead to just and fair treatment by management	7	5.04	11	7.91	37	26.62	53	38.13	31	22.30	$3.65 \pm 1.07$
Safety at the workplace											<b><math>32.33 \pm 7.40</math></b>
Key: 9-18=low; 19-27=moderate; 28-45=high [11]											

[Table/Fig-4]: Safety at the workplace (N=139).

Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		Mean $\pm$ SD
Most healthcare workers make errors	17	12.23	22	15.83	32	23.02	43	30.94	25	17.99	$3.27 \pm 1.27$
In my country there is a safe system of healthcare for patients	9	6.47	13	9.35	29	20.86	52	37.41	36	25.90	$3.67 \pm 1.15$
Medical error is very common	8	5.76	20	14.39	43	30.94	44	31.65	24	17.27	$3.40 \pm 1.11$
It is very unusual for patients to be given the wrong drug	10	7.19	15	10.79	31	22.30	55	39.57	28	20.14	$3.55 \pm 1.14$
Healthcare staff receive training in patient safety	6	4.32	9	6.47	32	23.02	60	43.17	32	23.02	$3.74 \pm 1.02$
About one in ten hospital patients across the world will experience some kind of adverse event	7	5.04	11	7.91	42	30.22	58	41.73	21	15.11	$3.54 \pm 1.01$
Safety of the healthcare system											<b><math>21.17 \pm 5.24</math></b>
Key: 6-12=low; 13-18=moderate; 19-30=high [11]											

[Table/Fig-5]: Safety of the healthcare system (N=139).

Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		Mean±SD
By concentrating on the causes of incidents I can contribute to patient safety	9	6.47	15	10.79	31	22.30	45	32.37	39	28.06	3.65±1.18
If I keep learning from my mistakes, I can prevent incidents	7	5.04	5	3.60	29	20.86	61	43.88	37	26.62	3.83±1.03
Acknowledging and dealing with my errors will be an important part of my job	9	6.47	10	7.19	29	20.86	49	35.25	42	30.22	3.76±1.15
It is important for me to learn how best to acknowledge and deal with my errors by the end of medical school	5	3.60	13	9.35	28	20.14	54	38.85	39	28.06	3.78±1.07
Personal attitudes to patient safety											15.02±3.72
Key: 11-22=low; 23-33=moderate; 34-55=high [11]											
[Table/Fig-6]: Personal attitudes to patient safety (N=139).											

Scale	Mean±SD
Error and patient safety	25.12±5.78
Personal influence over safety	25.03±5.77
Safety at the workplace	32.33±7.40
Safety of the healthcare system	21.17±5.24
Personal attitudes to patient safety	15.02±3.72
Total (patient safety)	118.66±23.33
[Table/Fig-7]: Score of each section and the total score.	

DISCUSSION

This study determined the attitudes of emergency department nurses towards patient safety in the Alqassim region, Saudi Arabia. Results revealed that nurses reported a moderate level of error and patient safety. This could suggest that nurses reported some errors and patient safety incidents but not at an excessively high or alarming level. Many studies have identified similar themes and factors contributing to errors and patient safety incidents, such as communication breakdowns, inadequate training and education, high workload and staffing shortages, and systemic failures [6,16]. Additionally, studies have found that nurses may underreport errors and safety incidents due to various factors such as fear of punishment, lack of reporting systems or support, and perceptions of blame and accountability [17,18]. Therefore, a moderate level of reported errors does not necessarily mean that all errors are being reported or that the actual frequency or severity of errors is accurately reflected in the data.

Present research findings were consistent with the results of a Turkish study investigating the attitudes toward patient safety among nurses in a Turkish healthcare facility, specifically in the fields of cardiology and cardiovascular surgery [19]. This Turkish study reported that despite positive job satisfaction (mean score 50.67), surgical nurses held mixed patient safety attitudes, with significant differences across units and age groups. OR nurses scored highest in teamwork (14.135, p-value=0.001), safety climate (12.357, p-value=0.002), and management perception (6.733, p-value=0.035) compared to colleagues in the Surgical Intensive

Care Unit (SICU) and surgical ward. Notably, younger nurses (18-30 years) perceived management more favorably than their 31-40-year-old counterparts (11.292, p-value=0.004) [19]. Similarly, another study conducted in the Hebei province of China revealed that nurses in infectious diseases wards exhibited a moderately high level of attitudes towards patient safety [20].

Nurses reported a moderate level of personal influence over safety, indicating a sense of influence without significant impact. Nurses reported a moderate workplace safety level, signifying a balance between feeling insecure and not at high risk. Previous studies highlighted workplace violence as a significant issue affecting safe care despite moderate safety perceptions [21,22]. Similarly, nurses' overall perception of workplace safety raised concerns about inadequate safety equipment and training. Despite a general sense of safety, specific concerns like workplace violence and inadequate equipment could impact nurses' ability to provide safe care [22].

In the current study, nurses reported moderate healthcare system safety levels. Previous studies highlighted concerns about communication, teamwork, leadership quality, and resource and support inadequacies [23,24]. Moreover, a moderate attitude towards reporting adverse events, with concerns over negative repercussions, has been observed in a study conducted in Saudi Arabia by Alquwez N [25]. Similarly, Chang HY et al., noted positive attitudes towards patient safety culture but identified areas for enhancement in communication, teamwork, and leadership [26]. Similar studies from the literature have been tabulated in [Table/ Fig-8] [2,10,19,20].

The safety culture in the emergency department is an important and central aspect that requires the attention of management, healthcare professionals, and decision-makers, as highlighted by Alshyyab MA et al., [27]. To tackle this issue, it becomes crucial to conduct regular assessments of safety culture, which provide hospital and emergency department administrators with useful insights into the areas that require development. Furthermore, these assessments gauge the efficacy of the implemented quality enhancement initiatives within the healthcare setting.

S. No.	Author's name and publication year	Place of study	Number of subjects	Objective	Conclusion
1	Bahar S and Önlér E 2020 [19]	Turkey	231	Evaluation of the patient safety attitudes of Turkish surgical nurses	None of the six domains achieved a positive mean score over 75.
2	Yin LP et al., 2023 [20]	Hebei Province, China	446	To investigate the state of affairs and the variables that influence nurses' perceptions of patient safety inwards for infectious diseases	Moderately high patient safety attitudes among infectious disease nurses.
3	Alzahrani N et al., 2019 [10]	Emergency departments of Saudi Hospitals	503	To investigate emergency department doctors' and nurses' patient safety attitudes	Saudi hospital emergency department doctors and nurses have poor safety attitudes, which correlates with error rates.
4	Malinowska-LipieŃ I et al., 2021 [2]	21 Polish hospitals	606 Nurses and 527 Physicians	To assess nurses' and doctors' views on hospitalised patient safety	Low patient safety scores for Work Conditions (WC).
5	Current study , 2024	Secondary/general hospitals of the Alqassim region, Kingdom of Saudi Arabia	240	To explores emergency department nurses' attitudes toward patient safety	Nurses hold moderate attitudes towards various aspects of patient safety.

[Table/Fig-8]: Comparison of the current study with other studies [2,10,19,20].



## Limitation(s)

This study had several limitations. First, the small population of nurses only focuses on one region of Saudi Arabia, which limits the generalisability of the results. This means the findings and the conclusions drawn may not apply and be true to other settings and healthcare professionals. Second, the self-administered nature of the questionnaire requires the nurses to recall past experiences. This may be affected by recall bias, which could somehow affect the study results. Lastly, the study only focuses on determining the relationship between the patient safety of emergency nurses. Thus, it does not identify the effects on each other and the factors that may affect each variable.

## CONCLUSION(S)

The findings indicate that nurses hold moderate attitudes towards various aspects of patient safety, including error and patient safety, personal influence over safety, safety of the healthcare system, and personal attitudes towards patient safety. Nurses must continue their education and training to stay current on best practices and promote healthcare safety. Hospitals and healthcare organisations should offer frequent training and professional growth programs to improve nursing skills. Implementing these actions can fortify patient safety and foster a robust safety culture in healthcare settings. By addressing the existing challenges and promoting a culture of open communication and collaboration, healthcare institutions can empower nurses to become active participants in creating a safer environment for patients. Continuous education and training on patient safety practices are essential for nurses. Further research is needed to explore the specific workplace factors that influence patient safety attitudes and behaviour in emergency departments.

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