MJN

Assessing Patient Safety Culture among Hospital Nurses in Mosul: A Comprehensive Survey

Bilal Ahmed Essa[1], Radhwan Hussein Ibrahim[2]*

[1]*College of Nursing, University of Mosul, City of Mosul, 41002, Iraq*
[2]*College of Nursing, Ninevah University, City of Mosul, 41002, Iraq*

*Corresponding Author's Email: prof.dr.radhwan@uomosul.edu.iq

ABSTRACT

Background: Patient safety culture stems from the collective and individual values, attitudes, perceptions, skills, and behaviors that shape health providers' commitment, approach, and effectiveness in managing safety. **Objective:** This study aimed to evaluate the patient safety culture among nurses in various healthcare settings, examining demographic characteristics and perceptions across domains including teamwork, leadership, communication, reporting, and hospital management. **Methods:** A comprehensive cross-sectional survey was meticulously conducted with 130 nurses from different hospitals. The participants provided detailed demographic information, and their responses to a Patient Safety Culture Survey, which covered five domains: unit/Work Area, Supervisor/Manager/Clinical Leader, Communication, Reporting Patient Safety Events, and Hospital Management, were thoroughly analysed. **Results:** The study revealed several key findings that can improve patient safety culture. Notably, at the same time, people generally hold positive views about how healthy teams work together; they express concerns about not having enough staff and relying too much on temporary workers. There are also concerns about mistreatment. The Leaders' approach to managing and communicating indicates a need to carefully balance efficiency with patient safety. The culture of reporting problems is somewhat inclined, with people reporting issues at varying frequency levels. When it comes to how well the hospital is run, people have mixed feelings about the management's commitment, the resources provided, and the coordination among different parts of the hospital. **Conclusion:** The findings of this study, with their profound implications for the fields of patient safety and healthcare management, not only highlight the intricate dynamics within healthcare units but also identify specific areas where targeted interventions can significantly improve the patient safety culture. The critical steps to creating safer healthcare environments, including addressing staffing challenges, nurturing supportive leadership, enhancing communication, and promoting a strong reporting culture, present a roadmap for positive change. The potential for improvement in the patient safety culture is not only a possibility but a tangible goal that can be achieved with the right interventions and strategies. This potential for improvement should inspire healthcare professionals, researchers, and policymakers to take action and work towards a safer healthcare environment.

Keywords: Communication; Healthcare; Hospital Management; Healthcare Settings; Leadership; Nursing; Patient Safety Culture; Reporting; Survey; Teamwork

INTRODUCTION

Ensuring patient safety continues to be a paramount concern in global healthcare systems. Researchers identify a deficient safety culture as a significant contributor to unsafe patient care delivery. According to recent studies by Chugh, Duggal, and Duggal (2022), along with Lee, Dahinten, and Lee (2023), a deficient safety culture significantly contributes to delivering unsafe patient care. Research has indicated that the proactive willingness of staff to voice concerns is crucial for enhancing patient safety, playing a pivotal role in averting errors, including those related to medication. According to various studies (Hémon *et al*., 2020; Laelasari *et al*., 2023; Lee *et al*., 2023), the proactive willingness of staff to voice concerns is crucial for enhancing patient safety and averting medication-related errors. When delving into the background of Mosul, located in Northern Iraq, it becomes evident that the city has weathered significant challenges in recent years, marked by conflicts and

disruptions in its healthcare system (Mandal, Basu, & De, 2020; Rosenberg, 2023; Attia & Ibrahim, 2023; Fathi & Ibrahim, 2023). Given this turbulent backdrop, an in-depth investigation into the impact of these challenges on hospital nurses' patient safety culture is required. The understanding gained from such an inquiry is imperative for orchestrating targeted interventions and implementing improvements in the delivery of healthcare services (Ludin, 2018; Diniarti *et al*., 2024; Rajendran *et al*., 2024).

The significance of this study resonates globally, emphasising the universal importance of patient safety in healthcare. By narrowing the focus to hospital nurses in Mosul, the research aims to illuminate the unique challenges this specific cohort faces while simultaneously identifying potential areas for improvement. The outcomes of this investigation hold the promise of contributing to developing strategies that can enhance patient safety culture not only in Mosul but also in analogous healthcare settings worldwide. This study encompasses a comprehensive examination and evaluates nurses' attitudes, perceptions, and practices related to patient safety. Factors such as communication, teamwork, and the reporting of errors are scrutinised to provide a holistic understanding of the existing patient safety culture.

The rationale of the study significance of patient safety, which contrasts with the lack of research specifically focusing on the patient safety culture among hospital nurses in Mosul. The investigation seeks to bridge this knowledge gap, offering insights to propel policy changes and improvements in healthcare practices. The study aspires to contribute valuable data to guide interventions to nurture a robust patient safety culture. This research's primary objectives are multifaceted and in alignment with these aspirations. The study aims to evaluate the current patient safety culture among hospital nurses in Mosul, to find out what works and what does not about current patient safety practices, to look into the many factors that affect this culture, including those that have to do with the organisation, education, and relationships between nurses, and to come up with ways that these nurses can improve the patient safety culture in Mosul. In pursuit of these objectives, the study addresses specific research questions, probing into the current patient safety culture among hospital nurses in Mosul, examining the key factors influencing safety practices, scrutinising how organisational policies and practices contribute to or impede a positive patient safety culture, and exploring nurses' perceptions regarding communication and teamwork about patient safety. This study assessed the patient safety culture among nurses in different healthcare settings. It examined demographic characteristics and perceptions across various domains, including teamwork, leadership, communication, reporting, and hospital management.

METHODOLOGY

Study Design

This study used a descriptive and cross-sectional design to examine the patient safety culture among hospital nurses in Mosul. The descriptive design allowed for a thorough investigation of the current state of patient safety culture, while the cross-sectional nature enabled data collection at a single point in time, offering a snapshot of the existing conditions.

Participants

Participants were selected using a stratified random sampling technique to ensure representation from each hospital and its various units. This ethical approval was attained. This signifies the study's adherence to ethical standards and the assurance that participants' rights and well-being are protected throughout the research.

The sampling strategy involved the following steps:

Stratification: Each hospital was divided into distinct strata based on the units: medical, surgical, intensive care, and emergency services. This ensured that each unit within the hospitals was represented in the sample.

Random Selection: Within each stratum, nurses were randomly selected to participate in the study. This was done using a random number generator to ensure that every nurse within a unit had an equal chance of being selected.

Sample Size Determination: The sample size of 130 nurses was determined based on power analysis to achieve sufficient statistical power for detecting meaningful differences and relationships within the survey data.

Factors considered in the power analysis included expected effect sizes, the desired level of statistical significance, and the variability in responses.

Proportional Allocation: The number of nurses selected from each unit and hospital was proportional to the nursing staff size in those units. This ensured that larger units contributed more participants to the sample, maintaining proportional representation.

Instrument

The data collection instrument was the Hospital Survey on Patient Safety Culture (HSOPSC). This survey tool is widely recognised and validated for assessing safety culture within healthcare organisations. It covers various dimensions, such as communication openness, teamwork within units, organisational learning, and overall perceptions of patient safety. Respondents indicate their agreement or frequency using a 5-point scale, ranging from 1 (strongly disagree or never) to 5 (strongly agree or permanently).

Reliability and Validity of the HSOPSC

Reliability

Internal Consistency: The HSOPSC has been shown to have high internal consistency, with Cronbach's alpha coefficients typically ranging from 0.70 to 0.90 across various dimensions. This indicates that the items within each dimension measure the same underlying concept.

Test-Retest Reliability: Studies have demonstrated that the HSOPSC has excellent test-retest reliability, meaning that the survey produces stable and consistent results over time when administered to the same group of respondents under similar conditions.

Validity

Content Validity: The HSOPSC was developed through an extensive literature review, expert input, and pilot testing, ensuring it comprehensively covers the relevant aspects of patient safety culture in healthcare settings.

Construct Validity: Factor analysis has confirmed that the survey items are grouped into distinct dimensions as intended, supporting the construct validity of the HSOPSC. This means the survey accurately measures the theoretical constructs of patient safety culture.

Criterion Validity: The HSOPSC has been validated against other established measures of safety culture and patient outcomes, demonstrating that it correlates well with related constructs and can predict essential outcomes in healthcare organisations.

Adapting the HSOPSC to the Local Context:

To ensure the relevance and accuracy of the HSOPSC in the local context of Mosul, Iraq, several steps were taken:

Translation and Back-Translation: The survey was translated into Arabic, the primary language of the participants, using a standard translation and back-translation process. This involved independent translators translating the survey from English to Arabic and then back to English to ensure the accuracy and equivalence of the translation.

Cultural Adaptation: The translated survey was reviewed by a panel of local healthcare professionals and experts to ensure that the items were culturally appropriate and relevant to the local healthcare context. Any modifications were made to ensure the survey items were understandable and applicable to the local setting.

Pilot Testing: The adapted survey was pilot-tested with a small sample of nurses from the target population to identify any issues with comprehension or relevance. Feedback from the pilot test was used to make further adjustments to the survey.

Validation in the Local Context: The reliability and validity of the adapted HSOPSC were assessed in the

local context by conducting exploratory and confirmatory factor analyses and calculating Cronbach's alpha coefficients for each dimension. These analyses confirmed the adapted survey's reliability and validity in local healthcare settings (Filiz & Yeşildal, 2022; Lee, Dahinten, & Lee, 2023).

Data Collection

Before data collection commenced, each hospital was visited to brief all staff, particularly nursing leaders, about the research project. These nursing leaders subsequently disseminated information regarding the study, encouraging staff participation in the survey. Questionnaires and informed consent forms were distributed directly to the nurses. To uphold respondent privacy, the survey was meticulously crafted to ensure complete anonymity. Furthermore, nurses were instructed to place their completed questionnaires in sealed envelopes collected during subsequent visits to safeguard confidentiality.

Data Analysis

The collected data was carefully analysed to gain valuable insights into the patient safety culture among hospital nurses in Mosul. Various statistical analysis techniques were used, including descriptive statistics, frequency distributions, and inferential statistics. Descriptive statistics helped summarise the participants' demographic characteristics and responses to the survey items. Frequency distributions showed how responses were spread across different aspects of patient safety culture. Inferential statistics, such as chi-square tests or analysis of variance (ANOVA), were used to explore potential connections between demographic variables and perceptions of patient safety. Additionally, subgroup analyses were conducted based on hospital units (medical, surgical, intensive care, and emergency services) to identify differences in patient safety culture across departments. The findings were presented clearly and organised, providing a comprehensive understanding of the patient safety culture among hospital nurses in Mosul during the study period.

Ethical Consideration

The Ninevah Institutional Review Board (IRB), Iraq approved this research protocol, with Approval No. CCMRE-NUR-23-8, on 8th November, 2023.

RESULTS

The study included 130 nurses, 88 males (67.7%) and 42 females (32.3%). The age distribution was as follows: 46 (35.4%) were 21–30 years old, 56 (43.1%) were 31–40, 23 (17.7%) were 41–50, and 5 (3.8%) were 51 or older. Most participants were married (90%), 8.5% were single, and the rest were widowed or divorced. Educational backgrounds varied: 12.3% had a high school education, 23.8% had a diploma, 56.9% had a bachelor's degree, and 6.9% had a master's degree. None had a doctoral degree. Participants were affiliated with various hospitals, with Ibn Sina Teaching Hospital and Ibn Al Atheer Teaching Hospital being the most prominent. 80% of the nurses reported not undergoing specific training. Most nurses worked in the Medicine Ward (non-surgical), Surgical Ward, and ICU. Regarding experience, 25.4% had 1–5 years, 31.5% had 6–10 years, and 43.1% had 11 or more years. Most nurses (63.8%) worked between 30 to 40 hours per week. Almost all participants (96.2%) reported having direct interaction with patients. These demographic and professional characteristics set the stage for the subsequent patient safety culture survey data analysis Table (1).

Table 1: Demographic and Professional Characteristics of Participants

Gender	Frequency	%
Male	88	67.7
Female	42	32.3
Age		
21 -30 years	46	35.4
31-40 years	56	43.1
41-50 years	23	17.7
51 and more	5	3.8

Marital Status		
Single	11	8.5
Marriage	117	90
Widow	1	0.8
Divorce	1	0.8
Educational Level		
High school	16	12.3
Diploma	31	23.8
Bachelor's degree	74	56.9
Master's degree	9	6.9
Doctoral Degree	0	0
Training		
Do not take training	104	80
Take training	26	20
Setting		
Medicine ward (non-surgical)	24	18.5
Surgical ward	24	18.5
ICU	19	14.6
Emergency department	18	13.8
Obstetrics	6	4.6
Paediatrics	15	11.5
Psychiatric \ mental health	2	1.5
Other	22	16.9
Experiences		
Less than one years	0	0
1-5 years	33	25.4
6-10 years	41	31.5
11 and more years	56	43.1

In Domain 1: Unit/Work Area, the survey found that most team members view their team as effective, with 66% agreeing that they work well together. However, concerns about staffing and workload were evident, as 48% felt that staff work longer hours than is suitable for patient care. On a positive note, 62% reported that their unit regularly reviews work processes to improve patient safety. Using temporary staff was a significant concern, with 38.5% agreeing that their unit relies too much on temporary staff. Issues related to mistreatment and a lack of support for errors were also highlighted, with 49% feeling that their mistakes are held against them and an equal percentage perceiving a lack of support for staff involved in patient safety errors. On a positive note, 75% agreed that their unit focuses on learning from mistakes rather than blaming individuals when errors occur. 49% of respondents expressed concerns about the impact of work pace on patient safety. 52.3% acknowledged the importance of collaborative teamwork during busy times. Evaluating changes for patient safety and addressing recurring patient safety problems received mixed responses, with 57% agreeing to the former and 40.8% to the latter. Overall, these findings highlight the complex dynamics within the unit, showing the need for targeted interventions to address staffing challenges and promote a supportive and learning-oriented patient safety culture (Table 2).

Table 2: Patient Safety Culture Assessment (Unit/Work Area)

Statement	1	%	2	%	3	%	4	%	5	%
The unit/work area functions as an effective team	2	1.5	3	2.3	1	0.8	66	51	58	45
There is sufficient staff to handle the workload	3	2.3	31	23.8	6	4.6	66	51	24	19
Staff work longer hours than optimal for patient care	0	0	24	18.5	16	12	62	48	28	22
The unit regularly reviews work processes to improve patient safety	1	0.8	11	8.5	6	4.6	81	62	31	24
There is an over-reliance on temporary staff	10	7.7	50	38.5	15	12	48	37	7	5.4
Staff feel that their mistakes are held against them	3	2.3	20	15.4	15	12	64	49	28	22
Reporting an event feels like writing up the person, not the problem	10	7.7	52	40	16	12	40	31	12	9.2
There is a problem with disrespectful behaviour in the unit	5	3.8	7	5.4	7	5.4	63	49	48	37
Errors in the unit focus on learning rather than blaming individuals	34	26.2	64	49.2	11	8.5	15	12	6	4.6
The work pace is so rushed that it negatively affects patient safety	8	6.2	19	14.6	17	13	64	49	22	17
During busy times, staff in the unit assist each other	24	18.5	44	33.8	12	9.2	31	24	19	15
Changes to improve patient safety are evaluated for effectiveness	4	3.1	5	3.8	24	19	74	57	23	18
There is a lack of support for staff involved in patient safety errors	10	7.7	37	28.5	14	11	63	49	6	4.6
The unit allows the same patient safety problems to recur	22	16.9	53	40.8	16	12	30	23	9	6.9

1 = Strongly Disagree, 2 = Disagree, 3 = Don't Know, 4 = Agree, 5 = Strongly Agree

In Domain 2, Focusing on Supervisor, Manager, or Clinical Leader, survey responses showed that many employees are worried about the pace of work. 68% of respondents agreed that their manager wants them to work faster during busy times, even if it means cutting corners. Only 18% disagreed with this. Regarding patient safety, opinions about the manager's responsiveness varied. 40% reported that their manager responded to safety concerns, 27% disagreed, and 15% maintained a neutral stance. These findings indicate a need to examine leadership practices further to balance efficiency and patient safety. Fostering a supportive and responsive leadership culture is essential to improving patient safety outcomes (Table 3).

In Domain 3, Survey Responses Revealed Several Noteworthy Insights in Communication. The survey results show that 61% of respondents are informed about errors that occur, which is a positive sign for communication. However, opinions were divided when discussing ways to prevent errors from happening again, with 28% strongly agreeing and 11.5% disagreeing. Changes based on event reports were positively received by 49% of the participants. It is also encouraging that 36% of the staff are willing to speak up if they notice anything potentially harmful to patient care. Furthermore, 39% strongly agreed that staff members take a proactive approach to addressing unsafe behaviours by those with more authority. However, there are concerns about 22.3% of staff being fearful of asking questions when something seems wrong, indicating potential communication barriers that must be addressed to improve a culture of open and transparent communication for patient safety (Table 3).

Table 3: Patient Safety Culture Assessment (Supervisor, Manager, or Clinical Leader)
Domain 2: Supervisor, Manager, or Clinical Leader

Statement	1	%	2	%	3	%	4	%	5	%
The manager encourages faster work during busy times, even if it means taking shortcuts	3	2.3	8	6.2	8	6.2	88	68	23	18
The manager takes action to address patient safety concerns brought to their attention	10	7.7	52	40	13	10	35	27	20	15

Domain 3: Communication

Statement	1	%	2	%	3	%	4	%	5	%
Staff are informed about errors that occur	4	3.1	13	10	16	12	79	61	18	14
When errors occur, ways to prevent them from happening again are discussed	4	3.1	15	11.5	36	28	39	30	36	28
Staff are informed about changes made based on event reports	2	1.5	8	6.2	14	11	42	32	64	49
Staff speak up if they see something that may negatively affect patient care	1	0.8	5	3.8	35	27	42	32	47	36
When staff see someone with more authority doing something unsafe for patients, they speak up	6	4.6	7	5.4	23	18	43	33	51	39
When staff speak up, those with more authority are open to their patient safety concerns	12	9.2	17	13.1	28	22	36	28	37	29
Staff are afraid to ask questions when something does not seem right	29	22.3	31	23.8	30	23	27	21	13	10

1 = Strongly Disagree, 2 = Disagree, 3 = Don't Know, 4 = Agree, 5 = Strongly Agree

The Survey Responses Provide Different Perspectives in Domain 4 of Reporting Patient Safety Events. Participants showed a moderate tendency to report mistakes before they reach the patient, with 41% in agreement. Similarly, there was a positive response to reporting mistakes that reached the patient but did not cause harm, with 39% strongly agreeing. Over the past 12 months, however, there has been diversity in the frequency of reporting patient safety events, with 44.6% reporting, 25% remaining neutral, and 9.2% not reporting any events. These findings highlight a positive attitude towards reporting, but the variations in reporting frequency indicate potential nuances that require further exploration. Understanding the factors influencing reporting behaviours is crucial for promoting a consistent and comprehensive reporting culture that improves patient safety in healthcare settings (Table 4).

In the domain-five evaluation of the hospital's role in patient safety, participants had varying sentiments in different domains. Hospital management's actions, which signalled a commitment to patient safety as a top priority, received favourable responses, with 39% strongly agreeing and 31% agreeing. However, providing adequate resources for patient safety improvements demonstrated a more distributed response, with 55% agreeing and 10% strongly agreeing. A notable concern emerged regarding hospital management's perceived interest in patient safety, primarily following adverse events, with 48% strongly agreeing. The transfer of patients between units and the exchange of critical information during shift changes emerged as areas that required attention, with participants indicating challenges and inconsistencies in these processes. Additionally, 52% and 6.9% strongly agreed that hospital management generally provides a work climate conducive to patient safety. However, coordination issues between hospital units raised concerns, with 51% agreeing and 48% strongly agreeing that units do not coordinate well. These findings underscore the multifaceted nature of the hospital's impact on patient safety and highlight specific areas that require focused interventions and improvements to ensure a comprehensive and coordinated approach to patient safety within the healthcare institution (Table 4).

Table 4: Patient Safety Culture Assessment (Reporting Patient Safety Events, Hospital)

SECTION 4: Reporting Patient Safety Events

Statement	1	%	2	%	3	%	4	%	5	%
When a mistake is caught and corrected before reaching the patient, how often is this reported?	5	3.8	11	8.5	21	16	53	41	40	31
When a mistake reaches the patient and could have harmed the patient but did not, how often is this reported?	5	3.8	11	8.5	19	15	45	35	50	39
In the past 12 months, how many patient safety events have been reported?	7	5.4	58	44.6	32	25	21	16	12	9.2

SECTION 5: The Hospital

Statement	1	%	2	%	3	%	4	%	5	%
The actions of hospital management show that patient safety is a top priority	1	0.8	5	3.8	40	31	51	39	33	25
Hospital management provides adequate resources to improve patient safety	13	10	7	5.4	72	55	37	29	1	0.8
Hospital management seems interested in patient safety only after an adverse event happens	10	7.7	18	13.8	18	14	62	48	22	17
When transferring patients from one unit to another, important information is often left out	11	8.5	45	34.6	12	9.2	42	32	20	15
During shift changes, important patient care information is often left out	22	16.9	62	47.7	15	12	26	20	5	3.8
During shift changes, there is adequate time to exchange all critical patient care information	34	26.2	57	43.8	11	8.5	25	19	3	2.3
Hospital management provides a work climate that promotes patient safety	9	6.9	14	10.8	9	6.9	67	52	31	24
Hospital units do not coordinate well with each other	1	0.8	1	0.8	0	0	66	51	62	48

1 = Strongly Disagree, 2 = Disagree, 3 = Don't Know, 4 = Agree, 5 = Strongly Agree

DISCUSSION

In the context of patient safety culture in Mosul hospitals, the study findings reveal strengths and areas for improvement. Comparisons with existing literature and international benchmarks provide valuable insights into the unique challenges and opportunities within the Iraqi healthcare system. The study's exploration of patient safety culture among nurses involved a meticulous examination of various demographic and professional characteristics, providing a robust foundation for understanding the nuances within the study population. The demographic distribution unveiled critical insights into the composition of the sample, shedding light on the gender, age, marital status, and educational background of the participating nurses. The notable prevalence of male participants, married individuals, and those with bachelor's degrees signifies a specific demographic profile within the nursing workforce that might impact the overall patient safety culture. The predominance of male participants in the study introduces a gender-specific dimension to the analysis, potentially influencing the dynamics of communication, teamwork, and leadership within healthcare settings. Further exploration into the potential implications of gender on patient safety attitudes and behaviours could contribute to a more nuanced understanding of the factors shaping the safety culture among nursing professionals.

Additionally, the high representation of married participants introduces considerations related to work-life balance, familial responsibilities, and potential sources of support or stress. These factors may intersect with perceptions of patient safety and could be explored further to discern their influence on the overall safety culture. Moreover, the educational background of the participants, with a majority holding bachelor's degrees, prompts a reflection on the correlation between educational attainment and attitudes toward patient safety. Investigating whether nurses with higher educational qualifications exhibit different perspectives on safety practices, communication, and reporting behaviours could offer valuable insights into the role of education in shaping patient safety culture. The comprehensive examination of demographic factors establishes a baseline understanding of the sample composition and lays the groundwork for subsequent analyses. These analyses can delve deeper into the intersections between demographic characteristics and the various domains of patient safety culture, providing a more nuanced comprehension of the intricate factors influencing safety attitudes and behaviours among nurses in diverse healthcare settings. The study revealed a multifaceted perspective on the patient safety culture within the nurses' unit or work area. Positive perceptions of teamwork effectiveness were evident, with 66% of respondents agreeing to work together as an effective team. This positive outlook on teamwork suggests a collaborative and synergistic approach among the nursing staff within the unit, which is a foundational element for ensuring patient safety. However, notable concerns surfaced in several dimensions, highlighting critical areas that warrant attention and intervention. Staffing emerged as a significant issue, with 48% of participants agreeing that staff work longer hours than are optimal for patient care. This raises concerns about potential burnout, fatigue, and the associated impact on patient safety. Addressing staffing challenges is crucial to maintaining an adequate and well-supported workforce and promoting optimal patient care delivery

(Abd El-Kader, 2024; Poddar & Alkhamaiseh, 2024).

Another noteworthy concern was the reliance on temporary staff, with 38.5% of participants agreeing that their unit relies too heavily on them. Dependence on temporary staff may introduce challenges related to continuity of care, communication, and familiarity with unit protocols, potentially compromising patient safety. Strategies to enhance the integration and support of temporary staff, including comprehensive onboarding and ongoing training, could mitigate these challenges. Issues related to mistreatment and the lack of support for errors were also highlighted. A concerning 49% of participants felt that their mistakes were held against them, indicating potential challenges in cultivating a fair and non-punitive culture. Creating an environment where errors are viewed as opportunities for learning rather than blame is crucial for fostering a culture of continuous improvement and ensuring that nurses feel comfortable reporting errors without fear of repercussions. The study aligns with existing research, indicating that nurses in Turkey (Güneş, Gürlek, & Sönmez, 2016) generally express lower positivity regarding patient safety culture within their healthcare institutions. The overall patient safety culture score of the study, akin to the findings of the Agency for Healthcare Research and Quality, falls below the desired threshold. However, it is noteworthy that our average score remains above healthcare research and quality (AHRQ, 2012). The benchmark and Chen and Li's (2010) study indicate a 50% score, signaling a foundation for improvement and suggesting potential for enhancing the patient safety culture in the sampled population (Chen & Li, 2010). Within Domain, which focuses on the nurses' perceptions of their supervisors, managers, or clinical leaders, the study revealed notable concerns about work pace expectations and leadership responsiveness to patient safety concerns. These findings shed light on the intricate balance required in healthcare settings between operational efficiency and prioritising patient safety, a challenge that resonates across diverse healthcare contexts. A significant concern brought to the forefront is the perception that managers encourage working faster during busy times, even if it involves taking shortcuts. A substantial 68% of respondents agreed with this statement, indicating a potential conflict between the demand for efficiency and the imperative to uphold patient safety standards. The delicate balance between meeting operational demands and ensuring the quality and safety of patient care is a persistent challenge in healthcare settings globally. The study also revealed varied perceptions regarding leadership responsiveness to patient safety concerns. While 40% of participants agreed that their managers take action when patient safety concerns are raised, 27% disagreed, and 15% remained neutral. This diversity in responses underscores the nuanced nature of leadership practices about patient safety. Effective leadership is pivotal in fostering a culture that values and prioritises patient safety, necessitating a proactive and responsive approach to addressing concerns frontline healthcare providers raise. These findings resonate with challenges faced in healthcare settings globally, where the pressure to enhance efficiency and productivity may sometimes inadvertently compromise the emphasis on patient safety. Striking the right balance requires leadership that recognises and addresses the inherent tension between these competing priorities. It involves creating a supportive environment where healthcare professionals feel empowered to voice their concerns about patient safety without fear of reprisal. Our study's results are consistent with the outcomes of previous research conducted by Alquwez *et al.* (2018), Bodur & Filiz (2010), and Danielsson *et al.* (2019). Within Domain, which delves into communication dynamics among nursing staff, the study highlighted positive aspects and areas that warrant improvement. The Communication dynamics are crucial in fostering a patient safety culture, and the study's findings provide valuable insights into how communication processes unfold among nurses. A positive aspect highlighted in the study is that a substantial majority, comprising 61% of respondents, acknowledged being informed about errors that occur. This finding suggests a degree of transparency and openness in communicating about errors within the nursing units. Effective communication about errors is a fundamental component of a patient safety culture, enabling learning from mistakes and implementing corrective measures.

However, the study also indicated areas for improvement, particularly in discussing ways to prevent errors from happening again. Only 28% strongly agreed with this aspect, while 11.5% expressed disagreement. This finding underscores the need to foster a culture of continuous improvement where healthcare professionals actively engage in discussions about preventing errors. Enhancing this aspect of communication could contribute to a more proactive approach to patient safety, where the focus extends beyond identifying errors to implementing preventative measures. A notable concern surfaced regarding the fear among staff of asking questions when something does not seem right. A significant 22.3% of respondents reported that staff are afraid to ask questions in such situations. Fear of communication can impede the flow of critical information, hinder

collaborative problem-solving, and potentially contribute to lapses in patient safety. Addressing this fear is paramount to creating an environment where nurses feel comfortable speaking up about concerns and actively participating in the communication processes that underpin patient safety. This is corroborated by earlier investigations with Brazilian and Portuguese nursing professionals (Fassarella *et al*., 2018) and in Ethiopia (Kumbi *et al*., 2020; Mohammed, Taddele, & Gualu, 2021). Domain, which centres on reporting patient safety events, has uncovered nuanced perspectives within the nursing staff. The findings revealed a moderate inclination toward reporting, indicating a generally positive disposition toward acknowledging and addressing patient safety incidents. However, within this domain, notable variations in reporting frequency were evident, shedding light on the complexities associated with reporting practices among the study participants. One aspect of reporting focused on incidents caught and corrected before reaching the patient.

The study showed a moderate inclination to report such occurrences, with 41% of respondents agreeing. This suggests a recognition among nursing staff that even near-miss events hold valuable insights for improving patient safety. Acknowledging and reporting near-miss incidents contributes to a proactive patient safety culture, allowing healthcare institutions to identify potential risks and implement preventive measures. Similarly, the study investigated reporting mistakes that reached the patient but did not result in harm. Respondents displayed a positive inclination, with 39% strongly agreeing about the importance of reporting such incidents. This emphasises a commitment to transparency and learning from adverse events, aligning with robust patient safety culture principles. However, the frequency of reporting patient safety events over the past 12 months exhibited diverse responses. While 44.6% reported incidents, 25% remained neutral, and 9.2% did not report any events during this period. These variations suggest that influencing factors may affect reporting behaviours among nursing staff. Understanding these factors is crucial for designing targeted interventions and encouraging consistent and comprehensive reporting. The level of favourable patient safety culture observed in this study is in line with results reported in Asia (53.58%) (Damayanti & Bachtiar, 2019) and Europe (53.9%) (Ribeliene *et al*., 2019), as well as in Jordan (ranging from 21 up to 78.8%) (Khater *et al*., 2015), Oman (ranging from 21.4 up to 83.4%) (Ammouri *et al*., 2015), and Ethiopia (ranging from 46% to 49.2%) (Wami *et al.*, 2016). However, it falls below the outcomes of studies in Spain (62%) (Granel *et al.*, 2020), four European countries (61.3%) (Sharp *et al.*, 2019), China (61.3%) (Feng *et al*., 2012), and Egypt (88.36%) (Abdelaliem & Alsenany, 2022). Conversely, it surpasses findings from previous studies in Iran (34.1%) (Kakemam *et al*., 2021), Egypt (30%) (Salem *et al*., 2019), Malaysia (23.9%) (Ismail & Khalid, 2022), and Ethiopia (ranging from 44% up to 45.3%) (Mohammed, Taddele, & Gualu, 2021). This variability may be attributed to differences in infrastructural and economic statuses among settings, variations in management and organisational leadership behaviour, and relationships among hospital staff (Abd El-Kader, 2024). A domain dedicated to evaluating the hospital's role in patient safety unravelled a nuanced perspective among nursing staff, indicating mixed sentiments concerning hospital management's involvement in ensuring patient safety. The study found that actions signalling the hospital management's commitment to patient safety as a top priority received favourable responses, with 39% strongly agreeing and 31% agreeing. This suggests that a significant portion of the nursing staff perceives a genuine dedication to patient safety at the organisational level. However, providing adequate resources for patient safety improvements yielded a more distributed response, with 55% agreeing and 10% strongly agreeing. This indicates a potential area for improvement in resource allocation to further enhance patient safety initiatives within the hospital. A notable concern emerged regarding hospital management's perceived interest in patient safety primarily after an adverse event occurs, as 48% of respondents strongly agreed with this statement. This finding emphasises a potential gap in proactive measures and highlights the need for fostering a culture where patient safety is continuously prioritised rather than reactive responses to adverse events. The transfer of patients between units and the exchange of crucial information during shift changes surfaced as areas requiring attention. A considerable proportion of participants (51% agreeing and 48% strongly agreeing) indicated challenges and inconsistencies in coordination between hospital units. This underscores the importance of streamlining communication and information transfer processes within the hospital setting to ensure a cohesive approach to patient safety. While hospital management was generally perceived as providing a work climate conducive to patient safety, with 52% agreeing and 6.9% strongly agreeing, the study identified areas for improvement, particularly in fostering coordination and collaboration between different units.

CONCLUSION

The findings of this study, with their profound implications for the field of patient safety and healthcare

management, shed light on the complex dynamics within healthcare units and pinpoint specific areas where targeted interventions can markedly enhance the patient safety culture. These insights emphasise the importance of addressing staffing challenges, fostering supportive leadership, improving communication, and promoting a robust reporting culture. Addressing staffing challenges is essential to ensuring healthcare units are adequately staffed to handle the workload without over-reliance on temporary staff. This approach helps maintain consistency in patient care and reduces the burden on existing staff, preventing burnout and errors. Supportive leadership plays a pivotal role in shaping the culture of patient safety. By taking decisive action to address patient safety concerns and demonstrating a genuine commitment to safety, management can foster an environment where staff feel supported and empowered to prioritise patient safety. Effective communication is crucial in healthcare settings, especially during critical transitions such as shift changes or patient transfers. Ensuring that all relevant information is accurately and comprehensively communicated can minimise the risk of errors. Promoting a strong reporting culture is also vital. Encouraging staff to report mistakes and near-misses without fear of retribution can significantly improve patient safety. A culture focusing on learning from errors rather than blaming individuals can lead to constructive changes and improvements. Future studies could explore the long-term impact of these interventions on patient outcomes and staff well-being. Additionally, research could be expanded to different healthcare settings and regions to validate the findings and adapt the interventions to various contexts. Understanding the role of technology in supporting these initiatives and the potential benefits of integrating advanced communication and reporting systems could also be valuable areas of investigation. Ultimately, these efforts will create safer healthcare environments and advance patient safety and healthcare management.

Study Implication

The study's implications are relevant to various stakeholders, including healthcare administrators, policymakers, and frontline healthcare professionals. The identified concerns, such as staffing issues, reliance on temporary staff, and mistreatment, highlight the need for targeted interventions at the unit level. Addressing these issues could enhance the patient safety culture and improve patient outcomes. The findings on communication barriers and reporting frequency underscore the importance of promoting open and transparent communication channels within healthcare organisations. Implementing training programs and interventions that encourage a culture of psychological safety may help alleviate staff fears of asking questions and promote proactive reporting of patient safety events.

Limitations

Despite the valuable insights gained from this study, it is important to acknowledge several limitations. Firstly, the cross-sectional nature of the research design restricts the establishment of causal relationships. Longitudinal studies could provide a more in-depth understanding of the dynamics and changes in patient safety culture over time. Additionally, the reliance on self-reported data introduces the potential for response bias, as participants may provide socially desirable responses. The generalizability of the findings may be limited, given that the study focused on a specific geographic location and healthcare settings. A more diverse and widespread sample could enhance the external validity of the results. Furthermore, the study did not delve into the perspectives of other healthcare professionals, and future research could benefit from a more comprehensive exploration of interdisciplinary collaboration in patient safety.

Recommendation

Healthcare organisations should invest in ongoing training programs that cover patient safety culture, effective teamwork, and communication skills. Leadership development programs should prioritise improving managers' responsiveness to patient safety concerns and balancing efficiency and safety. Hospitals should carefully evaluate staffing levels, especially temporary staff, and implement strategies to ensure the correct staffing ratios. Additionally, organisations can set up anonymous reporting systems and provide feedback to staff to encourage reporting. To ensure seamless and safe transitions, efforts should be made to improve coordination between hospital units during patient transfers and shift changes. These strategies collectively aim to strengthen the overall patient safety culture within healthcare settings, ultimately improving patient outcomes and staff satisfaction.

Conflict of Interest

ACKNOWLEDGEMENT

REFERENCES

Abdelaliem, S. M. F., & Alsenany, S. A. (2022). Factors Affecting Patient Safety Culture from Nurses' Perspectives for Sustainable Nursing Practice. *Healthcare (Basel, Switzerland), 10*(10), 1889. https://doi.org/10.3390/healthcare10101889

AbdEl-Kader, W. M. (2024). Exploring the Changes in Work Practices and Well-being of Critical Care Healthcare Professionals During the COVID-19 Pandemic: A Qualitative Study. *Mosul Journal of Nursing, 12*(1), 179-195.https://doi.org/10.33899/mjn.2024.182703

Alquwez, N., Cruz, J. P., Almoghairi, A. M., Al-otaibi, R. S., Almutairi, K. O., Alicante, J. G., & Colet, P. C. (2018). Nurses' perceptions of patient safety culture in three hospitals in Saudi Arabia. *Journal of Nursing Scholarship, 50*(4), 422-431.https://doi.org/10.1111/jnu.12394

Ammouri, A. A., Tailakh, A. K., Muliira, J. K., Geethakrishnan, R., & Al Kindi, S. N. (2015). Patient safety culture among nurses. *International Nursing Review, 62*(1), 102–110. https://doi.org/10.1111/inr.12159

Attia, Y. K., & Ibrahim, R. H. (2023). Difficulties experienced in clinical learning settings for nurses in Iraq: Perspectives of nursing administrators and instructors. *Informatics in Medicine Unlocked, 38*(1):101229 .https://doi.org/10.1016/j.imu.2023.101229

Bodur, S., & Filiz, E. (2010). Validity and reliability of the Turkish version of" Hospital Survey on Patient Safety Culture" and perception of patient safety in public hospitals in Turkey. *BMC Health Services Research, 10*, 1-9.https://doi.org/10.1186/1472-6963-10-28

Chen, I. C., & Li, H. H. (2010). I am measuring patient safety culture in Taiwan using the Hospital Survey on Patient Safety Culture (HSOPSC). *BMC Health Services Research, 10*, 1-10.https://doi.org/10.1186/1472-6963-10-152

Chugh, T. D., Duggal, A. K., & Duggal, S. D. (2022). Patient safety, clinical microbiology, and collaborative healthcare. *Annals of the National Academy of Medical Sciences (India), 58*(03), 128–135.https://doi.org/10.1055/s-0042-1744390

Damayanti, R. A., & Bachtiar, A. (2019, August). The outcome of patient safety culture using the hospital survey on patient safety culture (HSOPSC) in Asia: a systematic review with meta-analysis. *Proceedings of the International Conference on Applied Science and Health, 4*, 849-863. https://publications.inschool.id/index.php/icash/article/view/708

Danielsson, M., Nilsen, P., Rutberg, H., & Årestedt, K. (2019). A national study of patient safety culture in hospitals in Sweden. *Journal of Patient Safety, 15*(4), 328-333. https://doi.org/10.1097/PTS.0000000000000369

Diniarti, F., Said, M. S. M., Abd Rashid, N., & Poddar, S. (2024). Behavioral prevention of HBV transmission in urban communities toward global elimination of hepatitis in 2030: a systematic review. *Healthcare in Low-*

Resource Settings, 12(2). https://doi.org/10.4081/hls.2024.12072.

Fassarella, C. S., Camerini, F. G., Henrique, D. D. M., Almeida, L. F. D., & Figueiredo, M. D. C. B. (2018). Avaliação da cultura de segurança do paciente: estudo comparativo em hospitais universitários. Revista da Escola de Enfermagem da USP, 52, e03379.[Fassarella, C. S., Camerini, F. G., Henrique, D. D. M., Almeida, L. F. D., & Figueiredo, M. D. C. B. (2018). Assessment of patient safety culture: a comparative study in university hospitals. *USP Nursing School Magazine, 52*, e03379].https://doi.org/10.1590/s1980-220x2017033803379

Fathi, K. Y., & Ibrahim, R. H. (2023). Factors influencing integration of theory into practice in clinical skills acquisition among nursing students. *Informatics in Medicine Unlocked, 37*, 101181. https://doi.org/10.1016/j.imu.2023.101181

Feng, X., Bobay, K., Krejci, J. W., & McCormick, B. L. (2012). Factors associated with nurses' perceptions of patient safety culture in China: a cross-sectional survey study. *Journal of Evidence-Based Medicine, 5*(2), 50–56. https://doi.org/10.1111/j.1756-5391.2012.01177.x

Filiz, E., & Yeşildal, M. (2022). Turkish adaptation and validation of revised Hospital Survey on Patient Safety Culture (TR–HSOPSC 2.0). *BMC Nursing, 21*(1), 325. https://doi.org/10.1186/s12912-022-01112-9

Granel, N., Manresa-Domínguez, J. M., Watson, C. E., Gómez-Ibáñez, R., & Bernabeu-Tamayo, M. D. (2020). Nurses' perceptions of patient safety culture: a mixed-methods study. *BMC Health Services Research, 20*, 1-9.https://doi.org/10.1186/s12913-020-05441-w

Güneş, Ü. Y., Gürlek, Ö., & Sönmez, M. (2016). A survey of the patient safety culture of hospital nurses in Turkey. *Collegian, 23*(2), 225-232.https://doi.org/10.1016/j.colegn.2015.02.005

Hémon, B., Michinov, E., Guy, D., Mancheron, P., & Scipion, A. (2020). Speaking up about errors in routine clinical practice: a simulation-based intervention with nursing students. *Clinical Simulation in Nursing, 45*, 32-41.https://doi.org/10.1016/j.ecns.2020.03.003

Ismail, A., & Khalid, S. N. M. (2022). Patient safety culture and its determinants among healthcare professionals at a cluster hospital in Malaysia: a cross-sectional study. *BMJ Open, 12*(8), e060546. https://doi.org/10.1136/bmjopen-2021-060546

Kakemam, E., Gharaee, H., Rajabi, M. R., Nadernejad, M., Khakdel, Z., Raeissi, P., & Kalhor, R. (2021). Nurses' perception of patient safety culture and its relationship with adverse events: a national questionnaire survey in Iran. *BMC Nursing, 20*, 1-10. https://doi.org/10.1186/s12912-021-00571-w

Khater, W. A., Akhu-Zaheya, L. M., Al-Mahasneh, S. I., & Khater, R. (2015). Nurses' Perceptions of Patient Safety Culture in Jordanian Hospitals. *International Nursing Review, 62*(1), 82-91. https://doi.org/10.1111/inr.12155

Kumbi, M., Hussen, A., Lette, A., Nuriye, S., & Morka, G. (2020). Patient Safety Culture and Associated Factors Among Health Care Providers in Bale Zone Hospitals, Southeast Ethiopia: An Institutional Based Cross-Sectional Study. *Drug, healthcare and patient safety, 12*, 1–14. https://doi.org/10.2147/DHPS.S198146

Laelasari, N., Shoaliha, M., Wada, F. H., Prima, A., & Poddar, S. (2023). Cost Effectiveness Analysis Treatment of Pediatric Pneumonia Antibiotic Ceftriaxone and Cefotaxime at Dr. Chasbullah Abdulmadjid Hospital. *Malaysian Journal of Medicine & Health Sciences, 19*(SUPP9), 102-106. https://doi.org/10.47836/mjmhs.19.s9.15

Lee, S. E., Dahinten, V. S., & Lee, J. H. (2023). Structural equation modelling tests the association between the enabling and enacting factors of patient safety culture and patient safety. *BMC Nursing, 22*(1), 32.https://doi.org/10.1186/s12912-023-01196-x

Lee, S. E., Dahinten, V. S., Seo, J. K., Park, I., Lee, M. Y., & Han, H. S. (2023). Patient safety culture and speaking up among health care workers. *Asian Nursing Research, 17*(1), 30-36. https://doi.org/10.1016/j.anr.2023.01.001

Ludin, S. M. (2018). Risk of deterioration among general ward patients: Nurses' ability in assessing early warning signs. *Malaysian Journal of Medical Research (MJMR), 2*(1), 19-29. https://ejournal.lucp.net/index.php/mjmr/article/view/241

Mandal, I., Basu, I., & De, M. (2020). Role of nursing professionals in making hospital stay effective and less stressful for patients with ASD: A brief overview. *International Journal of Advancement in Life Sciences Research, 3*(1), 1-9. http://dx.doi.org/10.31632/ijalsr.2020v03i01.001

Mohammed, F., Taddele, M., & Gualu, T. (2021). Patient safety culture and associated factors among health care professionals at public hospitals in Dessie town, northeast Ethiopia, 2019. *PLoS One, 16*(2), e0245966. https://doi.org/10.1371/journal.pone.0245966

Poddar, S., & Alkhamaiseh, I. H. (2024). Exploring Anxiety Level among Nurses During COVID-Pandemic. A Systematic Review. *Mosul Journal of Nursing, 12*(1), 30-48. https://doi.org/10.33899/mjn.2024.182702

Rajendran, R., Subramanian, Y. R., Poddar, S., & Geetha, V. (2024). Empowering Healthcare Professionals Through AI-Powered Lifelong Learning for Improving Patient Care. In *Integrating Generative AI in Education to Achieve Sustainable Development Goals* (pp. 98–122). IGI Global. https://doi.org/10.4018/979-8-3693-2440-0.ch006

Ribeliene, J., Blazeviciene, A., Nadisauskiene, R. J., Tameliene, R., Kudreviciene, A., Nedzelskiene, I., & Macijauskiene, J. (2019). The nurses ' and midwives ' opinions on patient safety culture in obstetrics, gynaecology, and neonatology units. *The Journal of Maternal-Fetal & Neonatal Medicine, 32*(19), 3244-3250. https://doi.org/10.1080/14767058.2018.1461831

Rosenberg, C. E. (2023). *The Care of Strangers: The Rise of America's Hospital System*. Plunkett Lake Press.

Salem, M., Labib, J., Mahmoud, A., & Shalaby, S. (2019). Nurses' perceptions of patient safety culture in intensive care units: a cross-sectional study. *Open access Macedonian Journal of Medical Sciences, 7*(21), 3667. https://doi.org/10.3889/oamjms.2019.737

Sharp, L., Rannus, K., Olofsson, A., Kelly, D., Oldenmenger, W. H., & EONS RECaN group. (2019). Patient safety culture among European cancer nurses—An exploratory, cross-sectional survey comparing data from Estonia, Germany, Netherlands, and the United Kingdom. *Journal of Advanced Nursing, 75*(12), 3535-3543. https://doi.org/10.1111/jan.14177

Wami, S. D., Demssie, A. F., Wassie, M. M., & Ahmed, A. N. (2016). Patient safety culture and associated factors: A quantitative and qualitative study of healthcare workers' view in Jimma zone Hospitals, Southwest Ethiopia. *BMC Health Services Research, 16*, 1-10. https://doi.org/10.1186/s12913-016-1757-z