Original Research Article

Recent Update in Implementation of Patient Safety Culture Among Healthcare System in Saudi Arabia

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Abstract

Patient safety has become a central concern in healthcare systems worldwide due to its direct impact on healthcare quality, patient outcomes, and overall public health. It encompasses not only the delivery of clinical care but also the creation of a patient safety culture within healthcare organizations. Patient safety culture refers to the collective attitudes, behaviors, reporting, auditing, values, and beliefs that influence safety-related practices in healthcare institutions [1]. A strong safety culture is crucial because it shapes how healthcare professionals approach safety, address potential hazards, and collaborate in preventing errors. This literature review explores recent developments in the implementation of patient safety culture within the healthcare system in Saudi, highlighting successful strategies, challenges encountered, and gaps in existing research.
Keywords: Patient safety, Saudi Arabia health system, patient safety culture, safety practice, implementation.

INTRODUCTION

Patient safety is a critical component of healthcare quality, and cultivating a strong safety culture within healthcare organizations is essential for reducing medical errors and enhancing patient outcomes. The World Health Organization (WHO) emphasizes that prioritizing safety and productivity is fundamental to achieving successful outcomes within healthcare systems [10]. In line with this, Saudi Arabia's healthcare system has undergone significant transformation over the past few decades, focusing on improving patient care standards, healthcare infrastructure, and medical education [6]. As part of these efforts, the implementation of a patient safety culture has gained increasing attention, as it is recognized as one of the most effective strategies for minimizing errors, enhancing communication, and fostering a supportive environment for healthcare professionals.

This literature review examines the implementation of patient safety culture within Saudi hospitals, focusing on the barriers, challenges, strategies, and potential solutions identified in recent studies. By synthesizing various research findings, this review seeks to highlight the current state of patient safety culture, the factors influencing its success or failure, and the steps necessary for continued improvement in Saudi healthcare institutions.

METHODOLOGY
Search Strategy

An extensive search was carried out in electronic databases, including PubMed, Scopus, and CINAHL. More focus was on studies published in Saudi Arabia especially since the initiation of patient safety culture in Saudi Arabia in 2010. The search included keywords such as "patient safety culture," "healthcare system," "implementation," "safety practices," and "healthcare organizations." Only peer-reviewed articles published in English were included in the review.

Inclusion and Exclusion Criteria
Studies were eligible for inclusion if they:
- Examined patient safety culture within healthcare organizations.
- Reported on the implementation of safety culture initiatives.

- Provided empirical data (either quantitative or qualitative).
Studies were excluded if they:
- Do not focus on healthcare providers (e.g., studies conducted in non-healthcare settings).
- Are not original research (e.g., reviews, editorials).
- Lacked adequate data or methodological rigor.

Data Extraction
Data were gathered from the selected studies, which included details on:
- Study design and research methodology.
- Sample size and the healthcare context.
- Interventions or strategies employed to implement safety culture.
- Measured outcomes (e.g., patient safety incidents, staff satisfaction).
- Key results and conclusions.

* Defining Patient Safety Culture

Patient safety culture refers to the shared beliefs, values, practices, and attitudes within an organization that prioritize patient safety and aim to prevent harm [11]. It involves fostering an environment where healthcare professionals are encouraged to report errors and near misses without fear of punishment, where team-based communication is emphasized, and where leadership takes a proactive role in promoting patient safety. A robust safety culture is essential for reducing preventable harm and improving the overall quality of healthcare delivery.

The importance of patient safety culture is increasingly recognized by healthcare providers and policymakers worldwide. In Saudi Arabia, where the healthcare system is rapidly expanding, there is growing awareness that patient safety culture must be embedded in daily practices at all levels from frontline staff to senior management [3].

* Overview of Saudi Arabia's Healthcare System

Saudi Arabia's healthcare system has undergone significant reforms recently. The Ministry of Health (MOH) oversees a large network of public hospitals, while private hospitals also play a vital role in healthcare delivery [3]. These hospitals serve a diverse population and are responsible for meeting the healthcare needs of both citizens and expatriates. The Saudi Vision 2030 initiative aims to enhance healthcare infrastructure, integrate advanced technologies, and improve the overall quality of care in the Kingdom.

A key objective of this initiative is to strengthen patient safety and healthcare quality through systemic changes, including improved governance, enhanced training, and the implementation of evidence-based practices [4].

Despite these advancements, challenges related to patient safety culture persist in Saudi hospitals issues that this review will explore in greater detail.

* Current State of Patient Safety Culture in Saudi Hospitals

Recently, several studies have assessed the state of patient safety culture in Saudi hospitals, focusing on both strengths and weaknesses. Research indicates that while there is a general awareness of the importance of patient safety, its practical implementation remains inconsistent across hospitals in the kingdom.

a. Healthcare Providers' Perceptions of Safety Culture

In Saudi hospitals, healthcare workers have varied perceptions of patient safety culture, often shaped by their roles, educational backgrounds, and professional experiences. A study by El-Jardali *et al.,* (2014) assessed the baseline patient safety culture in a large teaching hospital in Riyadh. The findings indicated that although healthcare workers acknowledged the importance of patient safety, there was a lack of trust in the error-reporting systems, which hindered the development of a safety-conscious environment. Moreover, many healthcare professionals reported feeling unsupported in their efforts to report safety concerns, further weakening the hospital's safety culture.

A cross-sectional study conducted at a hospital in Hail City revealed deficiencies in several areas, including low confidence in leadership, inadequate staffing, poor communication, ineffective handoffs, weak teamwork, and overall leadership performance [22]. Similarly, a study by Algethami *et al.,* (2024) in a tertiary care hospital in Makkah found that while patient safety was identified as a key priority, there were significant gaps in the actual implementation of safety practices. Respondents pointed out that there must be improved interdepartmental communication and more effective mechanisms for reporting adverse events.

b. Barriers to Implementation of Patient Safety Culture

The implementation of patient safety culture in Saudi hospitals faces several challenges. These include structural, cultural, and organizational factors that hinder progress.

Lack of Training and Education:

One significant barrier is the lack of training on safety protocols and error reporting. According to Alrasheeday *et al.,* (2024), nurses in Saudi hospitals often receive insufficient training in patient safety, which contributes to the under-reporting of adverse events and safety concerns. Many healthcare workers also report feeling inadequately prepared to identify safety risks and address complex safety issues. Furthermore, Al Muharraq *et al.,* (2024) noted that varying levels of staff

training may obscure the true impact of safety culture on patient outcomes.

Abdurabuh *et al.,* emphasize that healthcare education should include training in patient safety and quality improvement at both undergraduate and postgraduate levels. They also highlight the importance of offering a short training program on patient safety in Arabic, particularly for newly hired staff especially those from non-Arabic-speaking backgrounds. The aim of this approach is to improve communication with patients and minimize the possibility of misunderstandings due to language barriers.

Communication Barriers:
Effective communication is a key component of patient safety, and barriers to communication often result in misunderstandings, delayed interventions, and unaddressed safety risks. In Saudi healthcare settings, hierarchical structures often intensify these communication challenges, particularly between junior and senior staff members. Alrasheeday *et al.,* (2024) highlighted that, nurses at the hospital in Hail City reported difficulties in communicating with physicians, especially when attempting to raise concerns related to patient safety. Historically, healthcare systems have operated within rigid hierarchies, with significant authority gradients particularly between physicians and other healthcare personnel which can discourage open dialogue and hinder collaborative decision-making. Furthermore, workforce diversity, cultural differences, and language barriers compound communication challenges in the Saudi context [12].

In addition, language barriers contribute to reduced satisfaction among both patients and healthcare providers while also hindering effective communication between them [21]. Al Malawi et al. noted that linguistic differences and cultural diversity often impair staff's ability to raise patient safety concerns, primarily due to time constraints and difficulties in communication [20]. Multiple studies have indicated that language barriers can lead to an incomplete understanding of patients' conditions, delayed treatments or misdiagnoses, poor patient assessments, and incomplete implementation of prescribed treatments. Furthermore, ineffective communication may also result from poor leadership and the absence of strategic efforts to establish clear and supportive communication channels. It is crucial, therefore, that healthcare professionals communicate and work together more effectively, especially between doctors and other staff. Such improvements can reduce medical errors, enhance treatment outcomes, and ultimately lead to greater patient satisfaction.

Cultural Resistance to Change:
Change in healthcare is a complex, multifaceted process closely tied to the understanding and evolution of nursing practice. Resistance to change, particularly in nursing, is an important obstacle to promoting a culture of patient safety. In the dynamic healthcare environment, an organisation's ability to adapt and respond to change is essential for its sustainability and success [21]. In Saudi Arabia, cultural norms play a pivotal role in shaping healthcare workers' beliefs, attitudes, and behaviours toward safety initiatives. Within a culture that places high importance on respect for authority, staff members may be reluctant to question senior colleagues or report errors involving higher-ranking personnel. This hierarchical structure and culture of deference can lead to the under-reporting of safety incidents, thereby obstructing efforts to build a transparent and accountable safety culture. Al Mutairi *et al.,* highlighted that fear of blame remains a significant barrier to incident reporting among healthcare providers in Saudi Arabia [12].

c. Leadership and Governance
The role of leadership in fostering a patient safety culture cannot be overstated. Strong leadership is essential for setting the tone and expectations that prioritize safety across all levels of the organization. Studies have shown that hospital leaders who are genuinely committed to patient safety and who allocate adequate resources to safety initiatives can significantly influence the overall safety culture. El-Jardali *et al.,* (2014) observed that leadership support for safety initiatives in a teaching hospital in Riyadh was instrumental in encouraging staff to report safety concerns, although there was still room for improvement in ensuring that all staff felt consistently supported.

Conversely, a lack of leadership commitment to patient safety can seriously undermine efforts to build and sustain a safety culture. Algethami *et al.,* (2024) found that in a hospital in Makkah, safety initiatives were often inadequately supported by senior leadership, resulting in fragmented efforts and unclear policies. When leadership fails to prioritize patient safety visibly, it becomes challenging to establish a cohesive and effective safety culture throughout the institution.

* Strategies for Improving Patient Safety Culture
Despite the challenges, Saudi hospitals have proposed and tested several strategies to improve patient safety culture. These strategies generally focus on leadership, communication, training, and creating an open, non-punitive environment for reporting errors.

a. Leadership Engagement
Leadership plays a central role in developing a strong patient safety culture. Hospitals in Saudi Arabia must ensure that leaders at all levels are actively engaged in promoting safety. This includes allocating the necessary resources such as training programs and fostering an environment where patient safety is recognized as a top priority. For example, many healthcare organizations have implemented strategies to connect senior leaders with frontline caregivers. Two of the most popular approaches are Executive WalkRounds and "Adopt-a-Unit" programs [19]. These

initiatives stem from the realization that a successful safety program hinges on establishing a connection between senior leadership, who manage crucial resources and policies, and the day-to-day realities of frontline operations.

The Ministry of Health's Healthcare Transformation Strategy (2019) further points out the value of leadership engagement at both institutional and policy levels, emphasizing that prioritizing patient safety is essential to broader healthcare reforms.

b. Training and Education Programs

A critical strategy for improving patient safety culture is investing in training and education programs for healthcare professionals. Continuing education offers nurses the opportunity to enhance their knowledge and skills, keeping pace with the latest developments in medical science, technology, and healthcare practices. It also allows them to regularly review their practices and ensure they are providing evidence-based care aligned with the most current standards in the nursing profession.

Abdulaziz *et al.,* state that well-designed development programs can help nurses continuously improve their competencies, enabling them to deliver high-quality care and serve as strong pillars in the provision of safe and effective health services. There are various strategies and methods used to improve nurse competency and performance. One widely adopted approach is formal training and education, which allows nurses to participate in courses and workshops relevant to their specialty offered both by the hospital and external institutions.

Another effective strategy is obtaining professional certifications in specific areas such as critical care, infection control, or cardiovascular nursing. These certifications validate a nurse's expertise and provide a strong foundation for delivering high-quality, specialized care. Alrasheeday *et al.,* (2024) emphasized the importance of regular and comprehensive training for nurses at the hospital in Hail City, noting that well-structured training programs enhance staff awareness and foster a strong commitment to patient safety.

c. Improving Communication

Effective communication within healthcare teams is essential for minimizing errors and enhancing patient safety. It ensures that safety concerns are promptly addressed and that all team members remain aligned in their approach to patient care.

Healthcare professionals have implemented several strategies to strengthen communication. In addition to widely used tools like the surgical safety checklist (e.g., the WHO Safe Surgery Checklist), the SBAR technique standing for Situation, Background, Assessment and Recommendation is commonly used to facilitate structured communication between nurses and

physicians. This approach helps ensure critical information is conveyed clearly and efficiently during patient handovers or when escalating concerns [18].

Another valuable technique is the use of CUS words (concerned, uncomfortable, safety issue), which allows team members to signal escalating levels of concern regarding a situation that may compromise patient or staff safety. These terms act as attention-grabbing cues that help initiate timely and serious conversations when safety is at risk.

Additionally, the implementation of standardized briefings and debriefings in operating rooms has been shown to improve perceptions of teamwork and communication among clinical staff. Structured communication practices like these contribute to a more cohesive and responsive work environment. Algethami *et al.,* (2024) highlighted the importance of creating interdisciplinary safety teams and holding regular safety briefings to enhance communication across departments and reduce organizational silos.

Furthermore, research has shown that fostering interprofessional collaboration and actively involving patients and their families in care planning significantly enhances the culture of patient safety [12]. When all stakeholders are engaged and communication is clear, patient outcomes improve, and the overall safety environment is strengthened.

d. Incident Reporting Systems

Incident Reporting Systems (IRS) are fundamental tools in many high-risk industries, including healthcare. Despite being relatively new in the healthcare sector, industries such as nuclear energy, aviation, railway, and firefighting have successfully used similar systems for decades. The underlying principle of IRS is straightforward: they offer a structured method for identifying potential risks, allowing organizations to implement targeted interventions to mitigate them. In healthcare, IRS serves as a valuable resource for uncovering hazards and promoting organizational learning. They provide frontline healthcare workers with a mechanism to voice concerns, enabling management to respond proactively to safety issues [22].

A qualitative survey conducted at the Prince Sultan Military Medical City (PSMMC) revealed that nurses frequently reported incidents, particularly those that did not result in patient harm [14]. This finding differs from other studies where incidents especially those resulting in harm are often under-reported due to fears of blame, punitive consequences, or professional repercussions. This highlights a critical challenge: for an IRS to be effective, it must be embedded within a broader culture of safety that encourages transparency and trust.

Establishing an effective and non-punitive error reporting system is a key element of a strong patient

safety culture. Such systems should be accessible to all healthcare staff and designed to protect the anonymity of those reporting. Anonymous reporting options can reduce the fear of retaliation and encourage more frequent and honest reporting, ultimately leading to the identification and resolution of a greater number of safety concerns [18].

El-Jardali *et al.,* (2014) emphasized the importance of robust reporting systems, noting that increased staff participation in error reporting was directly associated with improved safety practices and outcomes. Moreover, the true value of a reporting system lies in its full integration into the organization's quality improvement processes. When healthcare organizations not only gather reports but also examine them and make changes at the system level, similar to the Plan-Do-Study-Act (PDSA) cycle in quality management, it shows a real dedication to patient safety. Such comprehensive use of IRS demonstrates that the organization views patient safety not just as a compliance requirement, but as a core organizational value.

* Measuring Patient Safety Culture

evaluating a healthcare organization's patient safety culture represents a critical initial step toward establishing a strong and sustainable safety environment. Accordingly, the application of reliable and validated instruments for evaluating patient safety culture is essential for tracking progress and identifying areas in need of improvement. One of the most widely utilized instruments is the Hospital Survey on Patient Safety Culture (HSOPSC), developed by the Agency for Healthcare Research and Quality (AHRQ), and adapted for use in Saudi hospitals. Algethami *et al.,* (2024) employed the HSOPSC to assess patient safety culture in a tertiary hospital in Makkah, reporting that, although areas such as teamwork within units demonstrated positive outcomes, significant deficiencies remained in domains such as non-punitive response to errors and communication between different units. Similarly, Al Muharraq et al. applied the HSOPSC and found that the dimension "response to error" and "staffing levels" are scored the lowest among all measured areas (39.75%), (46.17%) respectively.

Furthermore, numerous national and international accreditation bodies, including the Central Board for Accreditation of Healthcare Institutions (CBAHI) and the Joint Commission International (JCI), mandate regular assessments of patient safety culture [17]. These assessments are designed to capture healthcare staff perceptions regarding key aspects such as teamwork, leadership commitment to safety, staffing adequacy, incident reporting frequency, and other factors critical to patient safety. Such evaluations provide organizations with essential insights into areas requiring improvement, supporting efforts to enhance the overall safety culture and to address specific patient safety challenges within individual hospital departments.

Accreditation is widely recognized as a critical mechanism for promoting the protection of healthcare workers and ensuring the consistent delivery of high-quality care.

Hospitals in Saudi Arabia are advised to use validated instruments, such as the Hospital Survey on Patient Safety Culture (HSOPSC) [17], and to stay updated with the latest versions of these tools to regularly assess their patient safety culture. Consistent evaluations support ongoing quality improvement efforts and allow institutions to compare their performance against national and international benchmarks, helping to identify effective strategies for long-term enhancement of patient safety.

CONCLUSION
The ongoing efforts to implement and strengthen patient safety culture in Saudi Arabia reflect a transformative shift in the nation's healthcare system one that is closely aligned with the ambitious goals of Saudi Vision 2030. This national agenda emphasizes excellence in healthcare delivery, improved patient outcomes, and the establishment of a world-class health system grounded in safety, transparency, and accountability.

Important improvements have already been made across various sectors of healthcare, as evidenced by increased awareness, adoption of standardized safety tools, growing emphasis on leadership involvement, and the integration of structured training and communication frameworks. These developments illustrate a strong institutional commitment to embedding a culture of safety at all levels from policymakers and hospital administrators to frontline healthcare providers.

While challenges remain, the foundation laid by Vision 2030 provides a powerful framework for overcoming them. The Vision's focus on human capital development, digital transformation, and regulatory reform offers unprecedented opportunities to further advance patient safety culture. With continuous investment in education, leadership engagement, and interprofessional collaboration, Saudi Arabia is well-positioned to serve as a regional leader in patient safety and healthcare quality.

Ultimately, the insights gained from recent research and national initiatives indicate a promising trajectory. By sustaining these efforts and fostering a learning-oriented, non-punitive environment, Saudi hospitals can continue to enhance safety practices and deliver high-quality care ensuring that patient safety remains at the heart of healthcare transformation in the Kingdom.

Authors Contributions
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