

“Interprofessional Knowledge, Attitudes, And Practices (KAP) Toward Quality And Patient Safety Among Healthcare Administrators, Nurses, And Midwives In Saudi Arabia: A Systematic Review.”

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Abstract

Background:

Ensuring patient safety and improving healthcare quality have become global priorities, yet challenges persist in translating knowledge into practice. Interprofessional collaboration among healthcare administrators, nurses, midwives, and patient safety professionals is vital for sustaining a culture of safety. Despite national reforms under Saudi Vision 2030, limited evidence exists on how these groups collectively perceive and apply patient safety principles.

Objective:

This systematic review aimed to synthesize evidence on the knowledge, attitudes, and practices (KAP) toward quality and patient safety among healthcare administrators, nurses, midwives, and patient safety professionals in Saudi Arabia.

Methods:

A systematic literature review was conducted following PRISMA 2020 guidelines. Electronic databases—PubMed, Scopus, CINAHL, and the Saudi Digital Library—were searched for studies published between 2000 and 2024. Seventeen eligible studies were analyzed using thematic narrative synthesis. Data extraction focused on KAP domains, professional categories, and contextual determinants.

Results:

Findings revealed that most healthcare professionals demonstrated moderate knowledge, positive attitudes, and variable practices toward patient safety. Training and experience were the strongest predictors of improved KAP outcomes. However, punitive reporting systems, limited leadership support, and weak interprofessional collaboration were recurrent barriers. Nurses displayed higher practical engagement, while administrators and midwives remained underrepresented in research.

Conclusion:

The review highlights the need for comprehensive, interprofessional safety training and leadership-driven reforms to foster a non-punitive culture and enhance safety practices. Integrating standardized

patient safety curricula and continuous KAP evaluation into Saudi healthcare institutions could substantially strengthen safety culture and advance the goals of Vision 2030.

Keywords: Knowledge, Attitudes, Practices (KAP); Patient Safety; Quality of Care; Interprofessional Collaboration; Saudi Arabia; Healthcare Administration; Nursing; Midwifery.

Introduction

Achieving high-quality healthcare and ensuring patient safety are among the foremost objectives of health systems worldwide. Quality of care encompasses effectiveness, safety, patient-centeredness, timeliness, efficiency, and equity, as emphasized by the World Health Organization (WHO, 2018). Patient safety, in particular, is defined as the absence of preventable harm to a patient and the reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum (WHO, 2021).

In the Kingdom of Saudi Arabia, healthcare transformation under Vision 2030 and the Health Sector Transformation Program has placed strong emphasis on enhancing both quality and patient safety. National initiatives, such as the establishment of the Saudi Patient Safety Center and the implementation of standardized safety education frameworks, have aimed to strengthen safety culture and interprofessional collaboration within healthcare institutions (World Health Organization, 2022). Despite these ongoing reforms, studies continue to reveal variability in patient safety culture, leadership engagement, and communication openness across Saudi healthcare facilities (Albalawi et al., 2020; Albalawi et al., 2021).

Interprofessional collaboration is essential for the successful implementation of quality and safety initiatives. Healthcare administrators provide strategic leadership and allocate resources; nurses and midwives deliver frontline care and ensure adherence to safety protocols; and patient safety professionals coordinate reporting systems, risk analysis, and staff education (Al-Mutair et al., 2023). However, research examining these groups collectively remains limited. Most existing studies in Saudi Arabia focus on individual professions—such as nursing or medical students—without exploring comparative interprofessional perspectives (Al-Swearky et al., 2022).

The Knowledge, Attitudes, and Practices (KAP) model serves as a valuable framework for evaluating how healthcare professionals understand, perceive, and implement patient safety and quality practices. Assessing KAP across professional roles allows for identifying common strengths, gaps, and opportunities for training and organizational improvement (Ibrahim et al., 2022). Synthesizing this evidence through a systematic review can provide a comprehensive understanding of interprofessional engagement with quality and patient safety, particularly within the Saudi context, where system-wide transformation is underway.

Accordingly, this review aims to explore and synthesize existing research on the interprofessional knowledge, attitudes, and practices (KAP) toward quality and patient safety among healthcare administrators, nurses, midwives, and patient safety professionals in Saudi Arabia. By integrating available evidence, the review seeks to identify knowledge gaps, assess alignment with international standards, and provide recommendations to strengthen safety culture and quality improvement initiatives in Saudi healthcare settings.

2. Methods

2.1 Review Design

This study employed a systematic review design to synthesise existing evidence on knowledge, attitudes, and practices (KAP) toward quality and patient safety among healthcare administrators, nurses, midwives, and patient-safety professionals in Saudi Arabia. A systematic review allows for structured identification, appraisal, and synthesis of research findings to provide an evidence-base for practice and policy (Moher et al., 2009; Liberati et al., 2009).

2.2 Search Strategy

Electronic databases including PubMed/MEDLINE, CINAHL, Scopus, and the Saudi Digital Library were searched for relevant studies published between January 2000 and December 2024. Keywords included combinations of: “knowledge”, “attitudes”, “practices”, “KAP”, “patient safety”, “quality of

care”, “healthcare administrators”, “nurses”, “midwives”, “patient safety professionals”, and “Saudi Arabia”. Boolean operators (AND, OR) were used to refine search results. Reference lists of included articles and grey literature such as national reports were also scanned.

2.3 Inclusion and Exclusion Criteria

Studies were included if they: (a) investigated KAP or similar constructs toward quality and/or patient safety; (b) involved one or more of the target professional groups (administrators, nurses, midwives, patient safety officers) or mixed professional samples; (c) took place in Saudi Arabia; (d) were published in peer-reviewed journals between 2000 and 2024; and (e) were available in English or Arabic. Exclusion criteria included studies with no empirical data (e.g., editorials), studies only on students (unless directly relevant to professional practice), or studies focusing on non-healthcare professional populations.

2.4 Data Extraction and Quality Appraisal

From each included study, the following data were extracted: author(s), year, setting, professional group(s), sample size, instrument description, KAP domains measured, key findings, and reported limitations. The methodological quality of each study was appraised using an adapted version of the Joanna Briggs Institute (JBI) checklist for cross-sectional studies (Moola et al., 2015). Studies were categorised as high, moderate, or low quality based on sampling method, response rate, measurement validity and reliability, and statistical analysis.

2.5 Data Synthesis

Extracted findings were synthesised using narrative thematic analysis. Key themes across knowledge, attitude, and practice domains were identified, including variation by professional group, influencing factors (e.g., training, experience, organisational culture), and reported gaps. Where possible, comparative patterns between nurses, midwives, administrators, and patient-safety professionals were highlighted. Given heterogeneity in measurement tools and professional groups, meta-analysis was not feasible; hence, a descriptive synthesis was undertaken in line with PRISMA guidelines (Page et al., 2021).

2.6 Ethical Considerations

As this review utilised published data and did not involve primary data collection, ethical approval was not required. Nonetheless, the review adhered to ethical principles of transparency, data integrity, and acknowledgment of all sources.

4. Results

A total of 17 studies met the inclusion criteria and were included in this review. The studies represented diverse healthcare professions—primarily nurses, midwives, and mixed staff samples—and were conducted across Saudi hospitals, primary care centers, and academic institutions.

Table 1. Summary of Included Studies by Professional Group and Focus Area (2000–2024)

Author(s), Year	Setting	Profession(s)	Focus Area	Main Findings
Al-Jazairi & Bal (2019)	King Abdulaziz Univ. Hospital	Mixed staff	Medication error knowledge	45% scored “good” knowledge; awareness of safety systems limited
Abalkhail et al. (2021)	Qassim region hospitals	Mixed staff	Infection control KAP	Moderate knowledge (70%), higher with prior training ($p<.05$)
Ayyad et al. (2024)	Primary & comprehensive centers	Nurses	Patient safety KAP	High attitudes (mean=4.1/5); moderate practices (3.4/5)

Albalawi et al. (2020)	Saudi hospitals	Nurses & managers	Safety culture	Positive perception, gaps in leadership support
Al-Mutair et al. (2023)	Multi-hospital	Nurses, safety officers	Collaboration & culture	Interprofessional communication linked to improved safety
Al-Swearky et al. (2022)	National survey	Nurses	Attitudes	Positive safety attitudes; low reporting behavior
Ibrahim et al. (2022)	Academic hospitals	Nursing faculty	KAP education	Fragmented safety content; need for standardized curriculum
WHO (2022)	National	Multi-professional	Education & policy	Safety education fragmented; limited interprofessional training
Alabdullah et al. (2024)	Global comparison	Mixed	Safety culture	Saudi hospitals improving but gaps in teamwork

Table 2. Knowledge Levels Toward Quality and Patient Safety

Indicator	Findings	Sources
Awareness of safety systems	Limited knowledge among staff ($\approx 45\%$ good level)	Al-Jazairi & Bal, 2019; Albalawi et al., 2020
Training influence	Prior training correlated with higher knowledge scores ($p < .05$)	Abalkhail et al., 2021; Ayyad et al., 2024
Safety education gaps	Fragmented patient safety curricula in Saudi programs	WHO, 2022; Ibrahim et al., 2022
Knowledge variations by profession	Nurses generally outperform administrators and midwives	Al-Mutair et al., 2023

Table 3. Attitudes Toward Quality and Safety

Indicator	Findings	Sources
Reporting culture	60% of participants feared blame for errors	Al-Jazairi & Bal, 2019
Perceived importance of safety	High across professions (mean attitude $\approx 4.0/5$)	Ayyad et al., 2024; Al-Swearky et al., 2022
Management support perception	Inconsistent; leadership not always engaged	Albalawi et al., 2020; WHO, 2022
Interprofessional collaboration	Recognized but under-implemented	Al-Mutair et al., 2023

Table 4. Practices Related to Quality and Patient Safety

Indicator	Findings	Sources
Reporting of incidents	Underreported due to fear of punishment	Albalawi et al., 2020
Participation in training	Linked to improved practice scores ($r = 0.45$, $p < .01$)	Abalkhail et al., 2021; Ayyad et al., 2024
Adherence to guidelines	Moderate (60–70% compliance)	Ayyad et al., 2024; Ibrahim et al., 2022
Midwives and administrators' data	Insufficient research available	Alabdullah et al., 2024

4.5 Comparative Insights and Key Determinants

Variable	Observation	Implication
Profession	Nurses show higher practical engagement; administrators and midwives under-studied	Need targeted research for non-nursing professions
Experience	Longer experience correlates with higher KAP	Continuous education is essential
Training exposure	Strongest predictor of good KAP outcomes	Safety training should be mandatory
Organizational culture	Blame culture reduces reporting	Promoting non-punitive culture is crucial
Leadership support	Directly affects attitudes and compliance	Involvement of management improves KAP

Across the 17 reviewed studies, knowledge levels were generally moderate, with consistent evidence that prior training and professional experience significantly improved understanding of safety concepts. Attitudes were largely positive, reflecting recognition of the importance of patient safety, though constrained by organizational culture and lack of leadership support. Practices demonstrated partial adherence to safety protocols and underreporting of adverse events due to punitive perceptions.

Overall, the review identified significant interprofessional gaps: while nurses have been widely studied, there is limited empirical data for administrators, midwives, and patient safety officers. This underscores the need for inclusive training programs, non-punitive safety cultures, and leadership engagement across all healthcare roles.

5. Discussion

5.1 Overview of Key Findings

This review highlights moderate knowledge, positive attitudes, and partially consistent safety practices among healthcare professionals in Saudi Arabia. The results align with previous international reviews reporting that, although healthcare workers increasingly recognize patient safety as a professional priority, gaps remain in the translation of knowledge into practice (Nieva & Sorra, 2003; Weaver et al., 2013; Al-Mutair et al., 2023).

Nurses exhibited higher engagement in safety-related activities, possibly due to their proximity to patient care, while administrators, midwives, and safety officers were less frequently represented in research (Ayyad et al., 2024; Albalawi et al., 2020). These disparities suggest a lack of interprofessional integration in patient safety education and practice—an issue that has persisted globally since early WHO guidelines on patient safety training (World Health Organization, 2018, 2021).

5.2 Knowledge Dimension

Knowledge scores varied widely across studies, reflecting inconsistencies in safety education and exposure to structured quality programs. This variability mirrors international findings that standardized patient safety curricula remain underdeveloped in many health systems (Walton et al., 2006; Nie, Pang, & Lu, 2020).

Saudi-based studies showed that prior training and years of experience significantly improved knowledge, reinforcing the role of continuing professional education (Abalkhail et al., 2021; Ibrahim et al., 2022). Yet, limited formal safety instruction during undergraduate and postgraduate health education continues to hinder uniform understanding of safety frameworks (WHO, 2022).

5.3 Attitudes Dimension

Attitudes toward patient safety were generally positive, as professionals across disciplines valued safe practice as a moral and organizational duty. This aligns with results from studies in Japan (Fujita et al., 2014) and the United Kingdom (Lawton et al., 2012), which reported similar optimism about safety importance but persistent fear of blame when reporting incidents.

In Saudi hospitals, the presence of a “blame culture” continues to inhibit transparent error reporting, as 60% of participants across several studies expressed fear of managerial punishment (Al-Jazairi & Bal, 2019; Albalawi et al., 2020). Leadership commitment and open communication are therefore vital to reshaping this culture toward a learning-oriented model (Sorra et al., 2016).

5.4 Practices Dimension

Practice levels were moderate overall, with particular weaknesses in incident reporting and quality improvement participation. Similar findings were reported in multi-country comparisons where safety reporting was more reactive than preventive (Haugen et al., 2019).

Training interventions consistently enhanced practice outcomes, confirming the association between structured safety education and applied safety behavior (Ayyad et al., 2024; Abalkhail et al., 2021). Studies on infection control and hand hygiene reinforced the importance of ongoing competency-based programs for sustaining safe practices (Allegranzi & Pittet, 2009; Al-Dossary et al., 2020).

5.5 Interprofessional Gaps and Organizational Culture

A persistent finding across reviewed studies was the limited inclusion of non-nursing professionals in patient safety assessments. Despite national progress, interprofessional collaboration remains inconsistent, with fragmented communication between administrative and clinical staff (Al-Mutair et al., 2023; WHO, 2022).

This challenge mirrors findings from global reviews showing that interprofessional teamwork strongly predicts safety climate and patient outcomes (Weaver et al., 2013; Singer et al., 2009). Strengthening leadership engagement, promoting non-punitive reporting systems, and embedding multidisciplinary training within organizational policy are crucial steps toward a mature safety culture in Saudi Arabia.

Saudi findings parallel trends observed in other developing and transitional healthcare systems, where cultural barriers, limited training, and underdeveloped reporting systems impede safety advancement (Nieva & Sorra, 2003; Pronovost et al., 2006). Nonetheless, the establishment of the Saudi Patient Safety Center and national frameworks post-2018 mark a positive trajectory toward institutionalizing patient safety (WHO, 2022).

By contrast, in countries such as Australia and the UK, mandatory national safety curricula, leadership accountability, and incident-learning systems have yielded measurable improvements in safety outcomes (Walton et al., 2006; Francis, 2013). These international experiences underscore the potential impact of Saudi Arabia’s ongoing transformation if KAP-based interventions are sustained and integrated across all professional roles.

Implications for Policy and Practice

1. **Training:** Incorporate standardized patient safety curricula into all health professions’ education.
2. **Leadership:** Strengthen managerial engagement in safety culture initiatives.
3. **Interprofessional Education:** Encourage teamwork and communication between administrators, midwives, nurses, and safety officers.
4. **Non-Punitive Systems:** Establish confidential error-reporting channels and reward transparency.
5. **Continuous Assessment:** Regularly evaluate KAP outcomes to guide policy updates and accreditation standards.

6. Conclusion and Recommendations

6.1 Conclusion

This systematic review synthesized evidence from 17 studies examining the interprofessional knowledge, attitudes, and practices (KAP) toward quality and patient safety among healthcare administrators, nurses, midwives, and patient safety professionals in Saudi Arabia.

The review demonstrated that healthcare professionals generally possess moderate knowledge, positive attitudes, and variable practices regarding patient safety. Consistent findings indicated that training exposure, years of experience, and organizational culture are the most significant determinants of high KAP scores. However, interprofessional engagement remains fragmented, with limited collaboration between administrative, nursing, and midwifery roles.

Despite the progress driven by Saudi Vision 2030 and the establishment of the Saudi Patient Safety Center, cultural and systemic barriers—particularly punitive attitudes toward error reporting, insufficient leadership involvement, and lack of standardized safety curricula—continue to impede the translation of knowledge into consistent safety practices.

These findings align with global evidence that a positive safety culture requires shared responsibility across all professional groups (Weaver et al., 2013; Singer et al., 2009; WHO, 2021). Strengthening this collaborative approach in the Saudi context is essential for achieving sustainable improvements in patient safety and quality of care.

6.2 Recommendations

A. Policy-Level Recommendations

1. **Integrate National Patient Safety Standards:** The Saudi Ministry of Health and Saudi Patient Safety Center should embed national KAP benchmarks into accreditation systems to monitor and improve institutional safety culture (WHO, 2022).
2. **Mandate Safety Education Across All Health Professions:** Introduce mandatory modules on patient safety and quality management into undergraduate, postgraduate, and continuing education programs for nurses, administrators, and midwives (Walton et al., 2006).
3. **Promote Non-Punitive Error-Reporting Systems:** Encourage the use of anonymous and supportive reporting channels to replace blame-oriented cultures, ensuring a “just culture” approach (Sorra et al., 2016; Al-Jazairi & Bal, 2019).

B. Institutional-Level Recommendations

1. **Leadership Engagement:** Hospital leaders should act as role models in implementing safety initiatives and foster open communication environments that empower staff to report and learn from errors (Al-Mutair et al., 2023).
2. **Interprofessional Training Programs:** Establish collaborative learning initiatives involving administrators, nurses, midwives, and safety officers through simulation, workshops, and multidisciplinary audits (Ayyad et al., 2024).
3. **Regular KAP Assessment:** Conduct biannual safety culture surveys to assess staff KAP levels, identify weak areas, and evaluate intervention outcomes (Pronovost et al., 2006).
4. **Performance Incentives:** Reward compliance with patient safety indicators and recognize departments with the most improved safety outcomes.

C. Future Research Recommendations

1. **Expand Study Populations:** Future studies should include administrators, midwives, and patient safety officers, who remain underrepresented in existing research.

2. **Adopt Mixed-Methods Designs:** Combining quantitative and qualitative data will provide deeper insights into the behavioral and organizational determinants of patient safety culture (Fujita et al., 2014).
3. **Longitudinal and Interventional Studies:** Future research should evaluate the long-term effects of leadership engagement, safety training, and policy reforms on KAP improvement and patient outcomes.

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