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Interprofessional Communication and Patient Safety in Saudi Arabia: Perspectives from Dentistry, Anesthesia, Nursing, and Patient Services

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ABSTRACT:

Background: Effective interprofessional communication underpins patient safety, yet evidence from Saudi Arabia is dispersed across professions. This review synthesized the evidence in dentistry, anesthesia and perioperative care, nursing, and patient services.

Methods: Following PRISMA 2020, PubMed/MEDLINE, Scopus, Web of Science, and CINAHL were searched for English-language studies published from January 2009 through December 2024. Risk of bias was appraised with the AXIS tool. Narrative synthesis was used because heterogeneous instruments precluded meta-analysis.

Results: Fourteen cross-sectional studies published between 2018 and 2024 were included. Teamwork was generally rated more favorably than feedback, handover, and communication processes. In dentistry, only a minority of respondents reached positive safety-attitude thresholds, and scores improved with clinical seniority and safety course attendance. Direct observation showed that the surgical time-out was fully completed in a minority of procedures, whereas survey perceptions of checklist value and teamwork improved over time. Nurse–physician communication was rated below expectations, and postoperative and critical care handover was perceived as good but undermined by interruptions, staffing, and language barriers. Communication problems were reported by 24.1% of surveyed patients, and complaints were dominated by managerial and

interpersonal issues. Risk of bias was low in two studies, moderate in eleven, and high in one.

Conclusions: Interprofessional communication in Saudi healthcare is valued but inconsistently operationalized. Structured tools, interprofessional safety education, and patient feedback systems warrant prioritization; higher-quality, interventional evidence is needed.

1. INTRODUCTION

Patient safety is a global health priority, and unsafe care remains a leading source of preventable harm. The landmark report To Err Is Human drew worldwide attention to the scale of avoidable adverse events and framed them largely as failures of systems rather than of individuals (Kohn et al., 2000). The World Health Organization has since set a long-term agenda that places safe care, strong safety cultures, and effective teamwork at the center of health system strengthening (World Health Organization, 2021).

Among the system-level contributors to harm, breakdowns in communication and teamwork are consistently implicated. Leonard et al. (2004) argued that effective teamwork and communication are critical determinants of safe care, and Lingard et al. (2004) demonstrated through direct observation that communication failures in operating rooms are frequent and consequential. These failures arise not only between individual clinicians but also across professional boundaries, where differences in training, status, language, and expectations shape what information is shared, with whom, and when.

Interprofessional communication refers to the exchange of clinically relevant information among members of different professions who share responsibility for a patient. Interventions that strengthen collaboration across professions have been proposed as a route to better practice and outcomes (Reeves et al., 2017). Structured communication processes, such as checklists, briefings, and standardized handoffs, are widely promoted precisely because they make this exchange explicit and reproducible (Haynes et al., 2009; Starmer et al., 2014).

Saudi Arabia offers a distinctive context for examining these issues. The health system is expanding rapidly under national transformation programs, and its workforce is multinational and multilingual, which adds linguistic and cultural complexity to everyday clinical communication. A national effort to measure safety culture has been under way, and patient-reported perspectives are increasingly sought through digital channels (Alasqah, 2023; Almusawi et al., 2023).

The professions considered in this review sit at different points of the care pathway. Dental teams work in small, often decentralized units in which dentists, hygienists, and assistants share responsibility for infection control, medication, and procedural safety (Al Sweleh et al., 2018). Anesthesia and perioperative teams operate in high-acuity, time-pressured environments where handovers and pauses for verification are routine. Nurses sit at the interface between physicians, patients, and support services, and carry much of the burden of continuity through shift and unit handovers. Patient services, including appointment, complaint, and feedback systems, form the patient-facing layer through which communication failures become visible.

Despite this breadth, the Saudi literature is fragmented. Studies are typically confined to a single profession, setting, or instrument, which makes it difficult to determine whether the communication problems described in one discipline are shared by others, or whether they are mirrored in patients' own accounts of safety. To our knowledge, no synthesis has examined these four domains together, which limits the capacity of policymakers and educators to design coordinated, interprofessional responses.

Therefore, this systematic review aimed to synthesize the available evidence on interprofessional communication and patient safety across dentistry, anesthesia, nursing, and patient services in Saudi Arabia. It addresses the question: what is the nature, quality, and reported impact of interprofessional communication on patient safety in these settings, and which factors facilitate or hinder it?

2. METHODS

2.1 Protocol and reporting

This review was conducted and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement (Page et al., 2021).

2.2 Search strategy and information sources

PubMed/MEDLINE, Scopus, Web of Science, and CINAHL were searched for studies published in English from January 2009 through December 2024. Search terms combined concepts of communication (communication, handover, handoff, teamwork, interprofessional), safety (patient safety, safety culture, adverse event, time-out, checklist), profession or setting (dentistry, dental, anesthesia, operating room, nursing, patient relations, complaints), and geography (Saudi Arabia, Kingdom of Saudi Arabia), using Boolean operators and database-specific controlled vocabulary where available. Reference lists of eligible reports were also screened manually.

2.3 Eligibility criteria and PICO framework

The research question was structured using the PICO framework:

1. Population: healthcare professionals (dentists, dental trainees and assistants, anesthesia and operating room staff, nurses) and patients or service users in Saudi Arabia.
2. Intervention/Exposure: interprofessional or professional–patient communication processes, including teamwork, handover, safety checklists, error feedback, and complaint or feedback systems.
3. Comparator: other professions, time periods, units, benchmark data, or no comparator.
4. Outcomes: perceptions of safety culture, communication quality, adherence to communication-based safety processes, patient-reported safety concerns, and complaints.

Inclusion criteria: (i) randomized controlled trials, cohort, case-control, cross-sectional, or case series designs; (ii) conducted in Saudi Arabia; (iii) addressing communication, teamwork, handover, or related safety processes in at least one of the four domains; (iv) reporting extractable quantitative outcomes; (v) published in English from 2009 onward.

Exclusion criteria: qualitative-only studies, reviews, editorials, conference abstracts, case reports, studies without Saudi data, and studies without communication- or safety-related outcomes.

2.4 Study selection and data extraction

After duplicate removal, records were screened by title and abstract, followed by full-text assessment against the eligibility criteria. Data were extracted using a standardized form covering authors, year, setting, design, population and sample size, instrument, key quantitative findings, and conclusions.

2.5 Risk of bias and certainty of evidence

Methodological quality was appraised using the Appraisal tool for Cross-Sectional Studies (AXIS) (Downes et al., 2016). Certainty of evidence was assessed using the GRADE approach (Guyatt et al., 2008). Certainty started at low for observational evidence and was evaluated for each outcome based on risk of bias (Table 4), inconsistency, indirectness, and imprecision. Final ratings ranged from very low to low (Table 5).

2.6 Synthesis

A narrative synthesis was performed by professional domain. A meta-analysis was considered but not undertaken because outcomes were measured with different instruments (HSOPSC, SAQ, handover scales, observation checklists, and patient questionnaires) and reported with non-comparable metrics, which precluded valid pooling.

3. RESULTS AND DISCUSSION

3.1 Study selection

The database search yielded 826 records. After removal of duplicates, 585 records were screened by title and abstract, and 73 reports were sought for full-text retrieval, of which 70 were assessed for eligibility. Fourteen studies met the inclusion criteria (Figure 1).

Figure 1. PRISMA 2020 flow diagram of study identification, screening, and inclusion. Searches identified 826 records; 241 duplicates were removed, 585 records screened, and 70 full-text reports assessed, yielding 14 included studies. Adapted from Page et al. (2021).

3.2 Characteristics of included studies

The 14 included studies were all cross-sectional and were published between 2018 and 2024, with five appearing in 2023. They covered dentistry (four studies), anesthesia and perioperative care (four), nursing (three), and patient services (three, including one hospital-wide safety culture survey), and were drawn from multiple regions including Riyadh, Jeddah, Makkah, the Eastern Province, Qassim, Jazan, and Hail. Table 1 summarizes their characteristics.

Table 1. Characteristics of the included studies

#	Study	Setting	Design	Population / sample	Instrument	Domain
1	Abou Hashish et al. (2023) [14]	Critical care units, Saudi hospitals	Cross-sectional, correlational	201 critical care nurses	Handover quality instrument and open-ended items	Nursing
2	Al-Abbadi et al. (2019) [15]	King Abdulaziz University Hospital, Jeddah	Cross-sectional survey	150 surgical patients	Pre- and post-operative patient questionnaire	Anesthesia / perioperative
3	Alasqah (2023) [8]	Primary health care, Qassim region	Cross-sectional survey	730 patients	Patient safety perception questionnaire	Patient services
4	Algethami et al. (2024) [16]	King Abdullah Medical City, Makkah	Cross-sectional survey	350 respondents (of 594 invited)	AHRQ HSOPSC version 2.0	Patient services / hospital-wide
5	Al-Khalifa et al. (2024) [17]	Public and private dental hospitals and clinics, Eastern Province	Cross-sectional survey	271 dental professionals	SAQ	Dentistry
6	Al-Khatib et al. (2019) [18]	King Abdulaziz University Hospital, Jeddah	Cross-sectional, direct observation	116 elective procedures (multiple specialties)	Observation checklist (WHO time-out items)	Anesthesia / perioperative

#	Study	Setting	Design	Population / sample	Instrument	Domain
7	Almusawi et al. (2023) [9]	38 primary care centers, Riyadh	Cross-sectional (secondary analysis of Mawid evaluations)	3,134 comments from 380,493 patients	Content analysis of patient comments	Patient services
8	AlOlayan et al. (2021) [19]	College of Dentistry, Dammam, Eastern Province	Cross-sectional survey	272 dental students and interns	SAQ	Dentistry
9	Al-Qarni et al. (2023) [20]	Single center, Riyadh	Cross-sectional survey	143 postoperative nurses	Handover Quality Rating Form	Nursing
10	Alsadun et al. (2021) [21]	King Abdulaziz Medical City, Riyadh (35 ORs)	Cross-sectional, two periods (2011, 2019)	461 OR staff (235 and 226)	Likert questionnaire on WHO checklist, teamwork, communication	Anesthesia / perioperative
11	Al-Surimi et al. (2018) [22]	Two dental colleges, Riyadh	Cross-sectional survey	221 female dental and dental hygiene students	Safety Attitudes Questionnaire (SAQ)	Dentistry
12	Al Sweleh et al. (2018) [10]	College of Dentistry, King Saud University, Riyadh	Cross-sectional survey	390 (students, interns, general dentists, assistants)	Modified AHRQ HSOPSC	Dentistry
13	Daheshi et al. (2023) [23]	Emergency departments, Saudi hospitals	Cross-sectional survey	250 nurses	Nurse–physician communication questionnaire (90-point scale)	Nursing
14	Saleem and Kadi (2022) [24]	Saudi Arabia; accredited general surgery residency programs	Cross-sectional survey	118 general surgery residents	Handoff survey	Anesthesia / perioperative

3.3 Key findings

Teamwork was generally rated more favorably than the processes that operationalize communication, including feedback after errors, structured handover, and checklist execution. Quantified outcomes and the authors' conclusions are presented in Tables 2 and 3.

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Table 2. Key quantitative findings of the included studies

Study (author, year) [ref.]	Principal findings	Key quantified outcomes
Abou Hashish et al. (2023) [14]	Most nurses rated handover as competent or better; intrusions and distractions were common; nearly all handovers were tool-guided, mainly with mnemonics such as SBAR; language barriers and staffing were key barriers.	Competent or better 86.1%; intrusions 59.7%; tool-guided 98.0%
Al-Abbadi et al. (2019) [15]	Surgeons were more likely than anesthesiologists to encourage patient questions; satisfaction rose after surgery (8.51 → 9.05 out of 10).	Surgeon 73.3% vs anesthesiologist 52.7% ("definitely"); anesthesiologist "no" 17.3%
Alasqah (2023) [8]	Patients identified diagnostic errors, communication problems and medication errors as leading safety concerns.	24.1% reported communication problems; 26.7% reported diagnostic errors; 16.3% reported medication errors.
Algethami et al. (2024) [16]	Positive responses exceeded global benchmark data for communication about error and organizational learning.	Communication about error P = 0.003; organizational learning P = 0.002
Al-Khalifa et al. (2024) [17]	Mean SAQ 65.14 ± 13.03; attending a patient safety course was strongly associated with better scores (P < 0.001); recent medical error experience also associated (P = 0.008).	Positive SAQ 22.5%; course attendance 52%
Al-Khatib et al. (2019) [18]	Time-out was applied in fewer than half of observed procedures and fully completed in about one quarter; no association with time of day (P = 0.83).	Applied 45.7%; fully completed 26.7%
Almusawi et al. (2023) [9]	Most comments were negative and dominated by management and interpersonal problems; the majority of complaints came from non-specialized centers.	Negative comments 59.1%; 2.6 complaints per 1,000 attendances/month
AlOlayan et al. (2021) [19]	Few participants reached the positive threshold; job satisfaction was the highest domain (70.25); SAQ scores rose from the fourth year to internship.	Positive SAQ 9.9%
Al-Qarni et al. (2023) [20]	Handover quality was perceived as high; quality perception differed by department (P = 0.004), nurse age (P = 0.036) and patient consciousness level (P = 0.006).	Supportive circumstances 55.2%
Alsadun et al. (2021) [21]	Between 2011 and 2019, all patient safety attitude items improved (P < 0.001); "excellent" ratings of the WHO checklist's importance rose; teamwork, communication and speaking-up improved.	Excellent rating 50% → 68%

Study (author, year) [ref.]	Principal findings	Key quantified outcomes
Al-Surimi et al. (2018) [22]	Teamwork climate (54.4 ± 28.0) and safety climate (51.4 ± 29.7) scored modestly; dentistry students had higher odds of positive perception than hygiene students (adj. OR 2.6–4.6); 3rd/4th-year students had higher teamwork perception than earlier years (adj. OR 2.3).	Response rate 70.8%
Al Sweleh et al. (2018) [10]	Teamwork within units was the most favorable domain and staffing the least favorable; feedback and communication about error was positive for roughly three in five dental assistants (58.3%); students were more critical than staff.	Positive teamwork 72.3%; staffing 10%
Daheshi et al. (2023) [23]	Nurse–physician communication quality was rated moderate and below expectations; older, diploma-prepared, more experienced and supervisory nurses reported better communication.	Mean 60.14/90
Saleem and Kadi (2022) [24]	Among respondents to the relevant items, 67 (72.8%) reported no formal handoff training and 35 (38.8%) reported being interrupted sometimes during handoff.	Sometimes interrupted 38.8%; no formal training 72.8%

Table 3. Authors' conclusions and implications for interprofessional communication

Study (author, year) [ref.]	Conclusion	Implication
Abou Hashish et al. (2023) [14]	Handover depends on staffing, attention and psychological factors.	Reduce interruptions; address language barriers
Al-Abbadi et al. (2019) [15]	Patients value clear communication; anesthesiologist–patient interaction is less visible.	Structured pre-anesthetic dialogue
Alasqah (2023) [8]	Patients perceive communication-related safety problems in primary care.	Patient-reported safety monitoring
Algethami et al. (2024) [16]	Strengths exist in error communication, with other domains needing improvement.	Benchmark and target weaker domains
Al-Khalifa et al. (2024) [17]	Formal safety education is linked with better safety culture.	Mandatory patient safety courses for dentists
Al-Khatib et al. (2019) [18]	Compliance with the time-out remains incomplete despite long-standing implementation.	Audit, feedback and leadership of the pause
Almusawi et al. (2023) [9]	Complaints stem mainly from management and interpersonal issues.	Staff training; continuous auditing

Study (author, year) [ref.]	Conclusion	Implication
AlOlayan et al. (2021) [19]	Overall safety attitudes were low among trainees.	Safety curricula and supervised teamwork
Al-Qarni et al. (2023) [20]	Handover is perceived as good but varies by unit and patient status.	Unit-tailored, standardized handover
Alsadun et al. (2021) [21]	Culture of communication, teamwork and speaking-up improved, but gaps persist.	Interprofessional education in the OR
Al-Surimi et al. (2018) [22]	Safety culture strengthens with clinical exposure; curricular integration is needed.	Teach teamwork early in dental curricula
Al Sweleh et al. (2018) [10]	Safety culture is uneven across roles; staffing and feedback structures need strengthening.	Role-specific communication training; error-feedback loops
Daheshi et al. (2023) [23]	Nurse–physician communication is not satisfactory.	Training and shared communication standards
Saleem and Kadi (2022) [24]	Handoff training was limited, and residents reported interruptions.	Formal handoff training and structured communication protocols.

Table 4. Risk of bias of the included studies (AXIS-based appraisal).

Study (author, year) [ref.]	Aims and design	Sampling	Instrument validity	Response / non-response	Analysis	Overall risk
Abou Hashish et al. (2023) [14]	Low	Some	Low	Some	Low	Low
Al-Abbadi et al. (2019) [15]	Low	Some	Some	Low	Some	Moderate
Alasqah (2023) [8]	Low	Low	Some	Low	Low	Low
Algethami et al. (2024) [16]	Low	Some	Low	Some	Low	Moderate
Al-Khalifa et al. (2024) [17]	Low	Some	Low	Some	Low	Moderate
Al-Khatib et al. (2019) [18]	Low	Some	Some	Low	Some	Moderate
Almusawi et al. (2023) [9]	Low	Some	Some	High	Some	High
AlOlayan et al. (2021) [19]	Low	Some	Low	Some	Low	Moderate

Study (author, year) [ref.]	Aims and design	Sampling	Instrument validity	Response / non-response	Analysis	Overall risk
Al-Qarni et al. (2023) [20]	Low	Some	Low	Some	Low	Moderate
Alsadun et al. (2021) [21]	Low	Some	Some	Some	Low	Moderate
Al-Surimi et al. (2018) [22]	Low	Some	Low	Low	Low	Moderate
Al Sweleh et al. (2018) [10]	Low	Some	Low	Low	Some	Moderate
Daheshi et al. (2023) [23]	Low	Some	Some	Some	Low	Moderate
Saleem and Kadi (2022) [24]	Low	Some	Some	High	Some	Moderate

Domain-level judgments are based on the reported study methods. The study-level ratings informed the outcome-level GRADE judgments in Table 5.

Certainty was low for perceptions of safety culture and attitudes, adherence to safety processes, and nurse–physician communication and handover quality. Self-report, convenience sampling, differences in measurement, and limited applicability across settings were considered in these ratings. Certainty was very low for patient-reported safety concerns and complaints, reflecting the high risk of bias in Almusawi et al. (2023) and limitations in the comparability and precision of the evidence (Table 5).

Table 5. GRADE Summary of Findings

Outcome	Studies (n)	Certainty (GRADE)	Reasons for rating
Perceptions of safety culture and attitudes	n= 6; Algethami et al. (2024) Al-Khalifa et al. (2024) AlOlayan et al. (2021) Alsadun et al. (2021) Al-Surimi et al. (2018) Al Sweleh et al. (2018)	Low	Self-report, convenience sampling and differences across SAQ and HSOPSC measures were considered. No further downgrade from low.
Adherence to safety processes	n= 2; Al-Khatib et al. (2019); Alsadun et al. (2021)	Low	Al-Khatib et al. (2019) [18] directly observed time-out adherence. Alsadun et al. (2021) [21] reported checklist perceptions as contextual evidence. No further downgrade from low.

Outcome	Studies (n)	Certainty (GRADE)	Reasons for rating
Nurse–physician communication and handover quality	n= 3; Abou Hashish et al. (2023) Al-Qarni et al. (2023) Daheshi et al. (2023)	Low	Risk-of-bias and applicability concerns arose from self-report, single-center settings, or role-specific samples. No further downgrade from low.
Patient-reported safety concerns and complaints	n= 3; Al-Abbadi et al. (2019) Alasqah (2023) Almusawi et al. (2023)	Very low	Downgraded for serious risk of bias, particularly in Almusawi et al. (2023) [9], and concerns about indirectness and imprecision across settings and measures.

Studies are identified by author, publication year, and reference number. Saleem and Kadi (2022) is synthesized narratively as evidence on handoff practices among surgical residents.

3.4 DISCUSSION

Communication is the connective tissue of safe care, and the evidence synthesized here suggests that Saudi healthcare professionals value teamwork but apply communication-based safety processes unevenly. This pattern is consistent with the foundational argument of Leonard et al. (2004) that teamwork and communication failures underlie many preventable adverse events, and with the observations of Lingard et al. (2004) that failures in the operating room cluster around the timing, content, audience, and purpose of exchanges. The findings across the four professional domains also converge in a recognizable way: favorable attitudes toward teamwork coexist with weaker ratings of feedback, handover, and structured verification.

In dentistry, perceptions of teamwork were consistently more positive than perceptions of staffing and feedback about errors, and only a minority of respondents reached the threshold defined as a positive safety attitude. Seniority and formal education appeared to be the strongest correlates of better scores. Trainees early in clinical exposure were more critical, while those who had completed a patient safety course reported more favorable culture. A plausible mechanism is that safety culture is learned through supervised exposure and explicit teaching rather than absorbed passively; as trainees gain procedural confidence and understand reporting channels, they interpret team behavior as safer. Dental care also frequently relies on small teams with limited formal reporting structures, which may weaken feedback loops. The consistency of these patterns across studies using the Safety Attitudes Questionnaire, whose domain structure was validated across clinical settings by Sexton et al. (2006), supports the robustness of the signal, although the use of convenience samples tempers its generalizability.

In anesthesia and perioperative care, an important divergence emerged between what staff perceive and what observers record. Surveys indicated improving attitudes toward the surgical safety checklist and toward speaking up, whereas direct observation showed that the time-out was often incomplete. This gap is in line with the broader literature, in which the benefits reported by Haynes et al. (2009) depended on genuine, engaged use of the checklist rather than on its nominal presence. Several mechanisms could explain the gap, including checklist fatigue, perception of the pause as a documentation task, steep authority gradients that discourage junior staff from interrupting, and social desirability in self-report. Patient accounts add another layer: surgeons were more likely than anesthesiologists to be perceived as inviting questions, which may reflect the brief, often rushed preoperative encounter that characterizes anesthesia care and the lower visibility of the anesthesiologist's role.

Among nurses, communication with physicians was rated as moderate and below expectations, whereas handover quality was generally perceived as good, albeit compromised by interruptions, workload, and language differences in a multinational workforce. The contrast is not contradictory; nurse-to-nurse handover is a more regulated, tool-supported activity, whereas nurse–physician exchange is shaped by hierarchy, availability, and professional culture. Notably, more senior and supervisory nurses rated communication more favorably, which may signal a perception gap in which those with greater authority experience fewer barriers than frontline staff. The value of structured handover is underscored by Starmer et al. (2014), who linked a standardized handoff program to fewer medical errors, and the included study by Saleem and Kadi (2022) found that many surgical residents in Saudi Arabia lacked formal handoff training and that 38.8% of respondents to the interruption item reported being interrupted sometimes.

From the patient-services perspective, 24.1% of surveyed patients reported a communication problem in primary care, and complaints were driven mainly by managerial and interpersonal issues rather than by technical care. This points to the patient-facing layer of communication as a distinct and measurable safety signal. Interestingly, patients undergoing elective surgery reported high satisfaction with their interactions, which appears to conflict with the negative tone of primary care complaints. The discrepancy is probably explained by setting and measurement: elective inpatient surgery involves planned, repeated contact with a defined team and satisfaction surveys tend toward ceiling effects, whereas high-volume primary care involves rapid encounters, and voluntary complaint channels preferentially capture negative experiences.

Taken together, these findings have practical implications. The Cochrane review by Reeves et al. (2017) suggests that interprofessional collaboration interventions can improve practice and outcomes, although the certainty of evidence is modest, which argues for careful local evaluation rather than uncritical adoption. Structured tools such as briefings, SBAR-style exchanges, and standardized handoffs; interprofessional education that brings dental, anesthesia, and nursing trainees together; mandatory safety education; and routine integration of patient-reported feedback into quality systems all appear justified. Importantly, adherence should be audited by observation rather than inferred from perception, given the divergence noted above.

3.5 LIMITATIONS

This review has limitations. All included studies were cross-sectional and largely self-reported, which precludes causal inference and exposes findings to response and social desirability bias. Instruments and metrics were heterogeneous, preventing meta-analysis, and many studies used convenience samples from single institutions. Restriction to English-language, published studies may have introduced language and publication bias, and the certainty of the evidence ranges from very low to low. Interventional evidence from Saudi Arabia was not identified.

4. CONCLUSION

Interprofessional communication is recognized as central to patient safety across Saudi dentistry, anesthesia, nursing, and patient services, yet the processes that translate this recognition into practice remain inconsistently applied. Priorities include structured communication tools, interprofessional safety education, observation-based auditing of safety processes, and systematic use of patient feedback. Future research should employ longitudinal and interventional designs, harmonized instruments, and multi-professional samples.

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AUTHOR CONTRIBUTIONS

All authors equally contributed to this work (Conceptualization, Methodology, Data Curation, Formal Analysis, Writing – Original Draft, Writing – Review & Editing, and Supervision).

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ETHICS STATEMENT

This study is a systematic review of previously published, de-identified data and did not involve new human or animal subjects; formal ethics approval was therefore not required.

DATA AVAILABILITY STATEMENT

The data extraction tables supporting this review are available from the corresponding author upon reasonable request. All included studies are publicly available in the cited peer-reviewed sources.

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