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Impact Of Quality Improvement Practices On Patient Safety And Patient Satisfaction In Primary Health Care Centers And Hospitals In The Makkah Region A Multidisciplinary Cross-Sectional Analysis Of Published National Evidence

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Abstract

Quality Improvement (QI) techniques are pivotal in influencing patient safety and satisfaction within healthcare systems. This study consolidates recent data from Saudi Arabia, namely the Makkah Region, to assess the impact of quality improvement-related factors on safety culture and patient satisfaction in primary health care centers and hospitals. National data from the Ministry of Health's Patient Experience Measurement Program (n = 536,406) revealed elevated satisfaction levels in PHCCs (mean = 4.2/5; 83.8%), with care provider domains attaining the highest scores (84.8%). Regional studies indicated variability: in Aseer PHCCs, satisfaction levels ranged from 14.9% to 33%. The data on patient safety culture from Makkah indicated a composite positive response rate of approximately 62% at King Abdullah Medical City, markedly lower than the global standard of 70%. Systematic reviews revealed significant obstacles to safety culture, such as punitive reactions to errors, excessive workload, and deficiencies in communication. In all research, quality improvement categories such as cooperation, organizational learning, communication, and adherence to guidelines consistently forecasted enhanced safety culture and patient satisfaction. These findings underscore the necessity for enhanced system-level quality improvement initiatives in the Makkah Region, particularly in incident reporting and service flow optimization.

Introduction

Quality improvement (QI) has emerged as a fundamental element of contemporary healthcare systems, focusing on the enhancement of quality, safety, and efficacy of patient treatment across primary, secondary, and tertiary levels. Global health organizations, notably the World Health Organization (WHO), assert that systematic quality improvement practices such as compliance with evidence-based protocols, ongoing professional development, efficient communication, and dependable incident reporting are essential for minimizing preventable harm and fostering a safer clinical setting (WHO, 2023).

Notwithstanding global progress, patient safety continues to be a critical concern, as recent evaluations reveal ongoing difficulties associated with medical errors, communication breakdowns, and systemic obstacles (Khalid et al., 2023).

The Health Sector Transformation Program in Saudi Arabia, part of Vision 2030, has bolstered initiatives to elevate healthcare quality, foster patient-centered care, and boost safety culture within facilities. National programs, exemplified by the Ministry of Health (MOH) Patient Experience Measurement Program, provide extensive oversight of satisfaction and service quality metrics. The 2023 nationwide survey, encompassing over 500,000 visitors to 2,390 primary health care centers (PHCCs), indicated a high overall satisfaction mean of 4.2 out of 5 (83.8%), with the “Care Provider” domain receiving the highest ratings at 84.8%. Nonetheless, the "Moving Through" domain representing waiting times, flow, and service navigation exhibited lower scores (82.8%), indicating persistent variability in operational effectiveness.

Regional data indicate other disparities. Research conducted in the Aseer region indicated moderate satisfaction levels, with merely 33% of rural primary healthcare attendees and 14.9% of urban attendees providing good evaluations of services, despite analogous clinical frameworks (Al-Qahtani et al., 2023). Conversely, PHC clinics in Riyadh demonstrated elevated satisfaction levels, with mean scores above 87% (Albaqami & Alshagrawi, 2025). These discrepancies suggest that although national quality improvement policies are prevalent, their execution differs markedly between regions and institutions.

Findings regarding patient safety culture exhibit a comparable tendency. A 2024 research at King Abdullah Medical City (KAMC) in Makkah indicated an overall positive response rate of roughly 62% on the Hospital Survey on Patient Safety Culture (HSOPSC), markedly below the international norm of 70%. Nonetheless, the study revealed that domains closely associated with Quality Improvement specifically “Organizational Learning and Continuous Improvement” and “Communication about Error” exceeded the global benchmark, indicating developing strengths in systematic Quality Improvement practices despite ongoing cultural challenges. Systematic assessments of the safety culture in Saudi hospitals regularly find excessive workload, punitive reactions to errors, and inadequate leadership as significant barriers, whereas robust teamwork and transparent communication are noted as beneficial factors.

The Makkah Region serves as a distinctly significant context for assessing the effects of Quality Improvement techniques, considering the national and regional trends. It accommodates a substantial resident population and attracts millions of pilgrims each year, resulting in heightened demands on healthcare capacity, safety infrastructure, and service quality. Comprehending the impact of QI methods on patient safety and satisfaction in this environment is crucial for guiding local enhancement efforts and advancing national health transformation objectives.

This study consolidates and analyzes current quantitative evidence from Saudi Arabia to assess the influence of quality improvement practices on patient safety and satisfaction, specifically emphasizing findings pertinent to the Makkah Region. This report synthesizes data from various research to offer a thorough analysis of existing strengths, deficiencies, and prospects for enhancing quality and safety in a vital healthcare region of the Kingdom.

Materials and Methods

This study utilized a narrative cross-sectional analytic methodology, synthesizing quantitative data obtained from current research conducted in Saudi Arabia from 2020 to 2025. This method aimed to assess the impact of Quality Improvement (QI) practices on patient safety culture and patient satisfaction in primary health care centers (PHCCs) and hospitals, focusing specifically on findings pertinent to the Makkah Region. This strategy facilitated the integration of existing empirical material from numerous high-quality national studies to create a consolidated and comparative analysis.

The literature review was performed utilizing various scientific sources, such as PubMed, Google Scholar, the Saudi Digital Library, BMC Health Services Research, the Saudi Medical Journal, and publications from the Ministry of Health (MOH) Patient Experience Measurement Program. The search

utilized keywords such as “quality improvement,” “patient safety culture,” “patient satisfaction,” “Saudi Arabia,” “Makkah,” and “primary health care.” Studies qualified for inclusion if they satisfied the following criteria: (1) conducted in healthcare facilities in Saudi Arabia; (2) published between 2020 and 2025; (3) presented quantitative findings concerning patient satisfaction or patient safety culture; (4) employed validated measurement instruments such as the Hospital Survey on Patient Safety Culture (HSOPSC), the MOH patient experience indicators, the Leeds Satisfaction Questionnaire, or other standardized satisfaction tools; and (5) included Primary Health Care Centers (PHCCs) or hospital-based care.

Studies that lacked quantifiable outcomes, did not employ validated tools, or were exclusively qualitative were omitted. Subsequent to the application of these criteria, seven studies were chosen for comprehensive analysis, encompassing national datasets with substantial sample numbers and regional studies offering context-specific insights. Special emphasis was placed on data from the Makkah Region due to its distinct healthcare requirements and elevated service volume during pilgrimage periods.

Data extraction was conducted manually and encompassed sample numbers, mean satisfaction ratings, domain-specific satisfaction percentages, safety culture composite scores, HSOPSC benchmark comparisons, and identified hurdles or facilitators of quality improvement implementation. The data were arranged into structured summary tables to provide straightforward comparisons between regions and facility types. National benchmarks from the Ministry of Health Patient Experience Program were integrated to explain regional findings.

The synthesis employed a comparative methodology to analyze safety culture and satisfaction outcomes in connection to established quality improvement elements, including cooperation, communication, adherence to guidelines, organizational learning, and leadership involvement. The objective was to discern trends among studies that illustrated the impact of QI methods on assessed outcomes.

This study, relying exclusively on already published and publicly accessible data, did not necessitate ethical approval. All studies used in the synthesis received proper ethical approval from their respective institutions or regional research boards. All data were presented precisely as published, without any alteration or statistical recalibration.

Results and Discussion

This study combined quantitative results from seven Saudi Arabian research articles, including national datasets and Makkah Region investigations. These statistics provide a comprehensive picture of primary and secondary healthcare quality enhancement, patient safety culture, and patient happiness.

National data from the Ministry of Health's Patient Experience Measurement Program showed rising primary healthcare satisfaction. 536,406 patients at 2,390 primary care clinics gave a mean satisfaction score of 4.2 (83.8%) in 2022. The “Care Provider” area scored 84.8%, showing good communication, respect, and professionalism, while the “Moving Through” domain waiting times, navigation, and service flow—scored 82.8%. These national figures show strong patient-staff involvement but nevertheless poor operational efficiency.

Regional findings varied greatly. A survey of 394 primary healthcare consumers in the Aseer Region found that 33% of rural patients and 14.9% of urban patients were satisfied with their service. A further study at King Abdulaziz Medical City in Riyadh found high satisfaction levels, with primary healthcare attendees scoring 52.1 out of 60 (87%) and general service assessment ratings of 27.6 out of 35 (79%). Patient satisfaction with primary healthcare nurse services was 91.34% and pharmacy services 91.30% in Al-Qassim, suggesting strong performance.

King Abdullah Medical City in Makkah provided a full grasp of patient safety culture in a top tertiary hospital. The Hospital Survey on Patient Safety Culture (HSOPSC) composite positive response rate was

62%, well below the international threshold of 70% ($p = 0.001$). However, "Organizational Learning and Continuous Improvement" and "Communication About Error" exceeded the global benchmark with p-values of 0.002 and 0.003, respectively. National systematic reviews found that insufficient staffing, workload stress, communication breakdowns, and punitive measures for errors hindered safety culture in Saudi hospitals, while intra-unit teamwork and managerial support were strengths.

Cooperation, communication efficacy, compliance with guidelines, and approachable leadership were positively correlated with patient satisfaction and safety in several studies. Interpersonal treatment had consistently high satisfaction levels, while system-level characteristics like patient flow and coordination performed poorly. Safety culture measures improved in companies with strong organizational learning and proactive error communication, highlighting the necessity for systematic quality improvement.

The statistics show that Quality Improvement methods in Saudi Arabia, notably in Makkah, significantly impact patient satisfaction and safety culture. National PHC satisfaction ratings show significant improvements under the Vision 2030 Health Sector Transformation Program, especially in patient-centered areas like communication, empathy, and medical professionalism. These strengths suggest that training, workforce development, and standardized clinical guidelines have improved patient-provider relationships.

The decline in service flow and waiting time shows that system-level quality improvement remains difficult. Global trends show that operational inefficiencies, not therapeutic shortcomings, cause patient dissatisfaction. The large discrepancy between national norms and Aseer's moderate satisfaction levels suggests that geographical features, facility workload, and local management practices strongly impact QI implementation. Despite good interpersonal care, facilities with high patient volumes or limited staffing may struggle to deliver efficient services.

The Makkah patient safety culture findings reveal the intricacy of tertiary care quality improvement strategies. The whole HSOPSC composite score (62%) fell short of global requirements, although organizational learning and error communication were good, suggesting room for improvement. Strengths show that quality improvement efforts like incident reporting, root-cause investigation, and continued education are paying off. The difference between these domain-specific strengths and the overall culture score shows how structural constraints including a blame culture, staffing issues, and divisional communication breakdowns remain.

Systematic reviews confirm these issues in Saudi hospitals. The blame game in response to errors inhibits communication, reporting, and learning from mistakes. Overwork and understaffing reduce quality improvement time and staff involvement. Organizational reforms must include non-punitive reporting, supportive leadership, and staff competence improvements to address these structural issues.

All studies found that quality improvement practices improved patient satisfaction and safety. Institutions with better teamwork, communication, and clinical protocol compliance had higher satisfaction and safety culture ratings. These links demonstrate a key Quality Improvement principle: better communication, collaboration, and learning improve patient outcomes.

Quality improvement strategies are essential in the Makkah Region, where high demand, seasonal changes, and large numbers of overseas pilgrims make healthcare supply difficult. Although safety culture is improving, continued efforts are needed to boost system-level resilience in the region. Safety and satisfaction can be improved by improving non-punitive reporting, patient flow, and interdepartmental communication.

Quality Improvement approaches in Saudi Arabia are yielding positive results in various areas, but they need better system-level integration to assure uniform performance across locations and facility types.

The Makkah Region has strong foundations for development, notably in organizational learning and communication, but considerable progress will require perseverance in safety culture transformation and operational quality improvement.

Conclusion

This study illustrates that Quality Improvement (QI) procedures significantly affect patient safety culture and patient satisfaction in healthcare environments in Saudi Arabia, particularly in the Makkah Region. National data indicate persistently elevated satisfaction ratings, especially in areas concerning provider communication and interpersonal care, suggesting that continuous quality improvement measures under Vision 2030 have enhanced patient-centered practices. Nonetheless, geographical disparities exemplified by the significantly lower satisfaction scores recorded in Aseer underscore the inconsistent execution of QI programs nationwide.

The culture of patient safety at King Abdullah Medical City in Makkah is below global benchmarks, reflected in a composite score of 62%, compared to the international standard of 70%. Nonetheless, the robust performance in organizational learning and communication regarding errors indicates that formal quality improvement components are becoming increasingly prominent. Ongoing obstacles such as a culture of blame, excessive workloads, and inadequate interdepartmental communication persist in obstructing progress and must be resolved to enhance safety culture at the systemic level.

The research strongly indicates that quality improvement strategies are significantly associated with enhanced safety and satisfaction outcomes. To enhance performance, healthcare institutions in the Makkah Region should fortify non-punitive reporting systems, refine workflow and patient flow processes, and improve inter-unit communication. Ongoing investments in personnel training, leadership involvement, and organizational learning will be crucial for fostering a sustainable culture of quality and safety.

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References

1. Albaqami, N., & Alshagrawi, A. (2025). Patient satisfaction with primary health care services in Riyadh, Saudi Arabia. Journal of Infection and Public Health, 18(1), 123–131. https://pubmed.ncbi.nlm.nih.gov/39990300/
2. Albalawi, A., Kidd, L., & Cowey, E. (2020). Factors contributing to patient safety culture in Saudi Arabia: A systematic review. BMJ Open, 10(10), e037875. https://doi.org/10.1136/bmjopen-2020-037875

3. Algethami, R., Mohammed, M. A., Alzahrani, H., Alghamdi, S., Alsaedi, A., & Alharbi, F. (2024). Patient safety culture in a tertiary care hospital in Makkah, Saudi Arabia: A cross-sectional study. BMC Health Services Research, 24, 11310. https://doi.org/10.1186/s12913-024-11310-7
4. Al-Qahtani, M. M., Alzahrani, S. H., Alghamdi, A. A., & Alshahrani, S. M. (2023). Patient satisfaction with primary health care services in rural and urban clinics in Aseer Region, Saudi Arabia. Saudi Journal of Primary Health Care, 4(2), 45–53.
5. Ministry of Health, Saudi Arabia. (2023). Patient Experience Measurement Program Annual Report – PHC Services. Riyadh: Ministry of Health.
6. Saudi Medical Journal. (2023). Client's satisfaction with healthcare services received at hospital OPDs and PHC facilities in Al-Qassim region. Saudi Medical Journal, 45(8), 826–836. https://pubmed.ncbi.nlm.nih.gov/39074882/
7. World Health Organization. (2023). Global patient safety report: Delivering safe care for all. WHO Press.
8. Khalid, A., Arshad, M., & Malik, A. (2023). Global burden of unsafe medical care: A systematic review of patient safety incidents. The Lancet Global Health, 11(1), e45–e57. https://doi.org/10.1016/S2214-109X(22)00456-9