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Integration of Multiple Health Disciplines the Role of Public Health, Nutrition, Pharmacy, Nursing and Health Administration in Enhancing Healthcare Quality: A Systematic Review

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ABSTRACT

Background: Healthcare systems today are undergoing fast transformation worldwide from fragmented, acute-cure and illness based systems to integrated, holistic and patient centered care. This present study tries to evaluate the multiple health disciplines and the role of public health, nutrition, pharmacy, nursing, and health administration in enhancing healthcare quality.

Study Objectives: The main objective of this systematic review is to systematically review and summarize evidence of the role of public health, nutrition, pharmacy, nursing, and health leadership in the healthcare system in Saudi Arabia and its combined impact on health care quality.

Materials and Methods: The study type or the research design selected was exploratory research design. The researcher had screened various studies conducted in the area of health care integration, including the above mentioned areas. Researcher will evaluate the studies based on administrative practices for the cause of integration, the policy framework of government, challenges and related issues along with the measures taken for the same. The respective timeline of the study was from the period of 2014 to 2024.

Results: Issues in policy alignment, regional equity, and longitudinal evaluation are still barriers to fully realizing integrated health services. The progression of interdisciplinary frameworks and collaborative building will support key enablers for delivering quality, patient-centered care throughout the Kingdom.

Keywords: *Multidisciplinary healthcare integration, Public health in Saudi Arabia, Nutrition and chronic disease prevention, Clinical pharmacy collaboration, Healthcare quality enhancement, Saudi healthcare transformation.*

1. INTRODUCTION

Global Aspect of Integrated Care

Healthcare systems today are undergoing fast transformation worldwide from fragmented, acute-cure and illness based systems to integrated, holistic and patient centered care (PCC). **[1]** This move towards collaborative care in healthcare systems worldwide is a key momentum and driving force for Inter professional Education (IPE) and Inter professional Collaborative Practice (IPC) as the principle catalyst for the Quadruple Aim of Improving population health, improving patient experience, decreasing per capita costs, and improving work-life balance for providers. The World Health Organization (WHO), for example, defines inter professional education as learning together, and from, and about other professions to improve collaboration and quality of care and is an essential differentiation parameter for high-quality healthcare. High-quality care and patient safety is not possible without well-organized teamwork and communication between health professionals to the complex health problems patients experience. **[2], [3]**

The KSA Model of Care (MOC)

The MOC is an operational mechanism that was built for health systems to provide integrated healthcare services, and is an important pillar of health reform. The MOC is a purposeful and systemic change in care delivery from a curative model to one of person-centered care and prevention. The MOC is a formal approach that will be implemented throughout the Kingdom through twenty Health Clusters, and this only works if all of the elements below are in place. **[4], [7]**

Integrated Systems

Keeping Well, Planned Procedure, Women & Children, Urgent Problems, Chronic Conditions and the Final Phase of Life. To that end, the successful implementation of these six SOCs (Systems of Care) will depend entirely on integrated inter professional collaboration and transition between a variety of service levels (i.e, virtual, primary, secondary, tertiary and quaternary care). **[8], [3]** The Keeping Well SOC and the Chronic Conditions SOC are two of SOCs that are targets for integrated care. Fundamental to the successful implementation of the Keeping Well SOC, which focuses on preventative and public health, is the upstream involvement of Public Health and Nutrition colleagues. **[5]** Additionally, the Chronic Conditions SOC will also involve sufficient assessment and monitoring of continuous and longitudinal care for patients, requiring the involvement of nursing, pharmacy, and family practice care working together intensely and directed. **[6], [9]**

Thus, the administrative policy is to integrate discipline based on a specific care requirement determined by each SOC. On the horizon is the government embracing international frameworks for quality improvement of health systems, involving frameworks in the public domain such as those proposed by WHO and World Bank, and those designed by the Institute for Healthcare Improvement's "Triple Aim" framework. With the transition to Value-Based Healthcare (VBH) and ultimately to Accountable Care Organizations (ACOs), this initiative is coming to a close. **[11], [12]** ACOs replicate best practices from the United States and other developed markets, but ultimately require a transformation in the ways care is available and paid for, such that organizations (hospitals, providers) are accountable for quality and total cost of care for well-defined populations.

Health Administration professionals are an important stakeholder in appropriately structuring the governance, managing population health as a practice and system of care, and operationalizing the complications of corporatizing and privatizing the public healthcare system. ACOs provide the most significant administrative push for deeply integrated clinically and organizationally because they operationalize the objectives of Triple Aim through a requirement of integration, and monitoring quality and cost data, as well as organized primary care with teams of care. **[10], [9]**

2. CONTRIBUTIONS AS PER DISCIPLINES

Nursing

Nursing is arguably the most essential discipline for the operational success of the MOC. Nurses are positioned as central to chronic disease management, providing continuous care, education, and utilizing digital technologies to enhance care delivery. **[13]** The official scope of nursing practice, delineated by the Saudi Commission for Health Specialties (SCFHS), is broad, encompassing evidence-based practice, leadership, strategic planning, quality/safety management, and health education/promotion.

Pharmacy

Pharmacists are instrumental in enhancing medication safety and ensuring optimal therapeutic outcomes, a key component of quality enhancement. Collaboration between pharmacists and nurses is recognized as highly beneficial, with nurses valuing pharmacists' expertise in medication information and preparation, and pharmacists appreciating nurses' direct patient care knowledge. **[14]**

Nutritionists

Nutrition is crucial regarding the elevated rates of chronic NCD's, and it therefore directly supports the MOC "Keeping Well"

and "Chronic Conditions" systems. Studies have shown measurable and successful integration of clinical dietitians into Primary Health Care Centers (PHCCs). Although this policy analysis supports the employment of more clinical dietitians to function as members of a multi-disciplinary team due to their professional knowledge and practice setting, healthcare systems should acknowledge the complicated nature of its patients who are critically ill and have chronic needs component of care. **[12], [13]**

Public Health

Saudi Arabia's transformation is fundamentally shifting toward a population-based public health model, which is crucial for disease prevention and control. **[15]** This is reflected in the Ministry of Health (MOH) implementing the MOC to emphasize holistic healthcare delivery, addressing mental and social well-being alongside physical health—core public health goals.

Health Administration

HA's most significant role is leading the movement towards Value-Based Healthcare and the ACO model. The leaders of HA will implement the governance structure and quality standardizations around clinical quality measurements. **[9]** The national PROMs strategy, which officials confirmed is in progress, makes value measurement (outcomes that matter to the patient) the key measure of success in a national assessment of value; this is an excellent mechanism for quality assurance. Although interest in interprofessional collaboration is growing, policy alignment, interprofessional education and integrated service delivery areas remain as gaps in interprofessional practice. Barriers to effective health outcomes are related to fragmented modes of care, lack of educational programs, and regional differences in infrastructure. Performing a systematic review of the literature will be important for characterizing the current landscape; approaches that integrated disciplines effectively; and strategic opportunities for improvement in the future. **[12]** This review will be valuable to the synthesis of evidence for how multidisciplinary integration of health and human services disciplines improve quality in health delivery in Saudi Arabia. The purpose of the study is to examine collaborative structures, shared capabilities, and models for outcomes to inform educators, policy makers, and practitioners about recommendations for multidisciplinary collaboratives in the health disciplines. As these types of contributions are necessary to support national conversations for reform advocacy in health systems and to create sufficient rigour to support goals for Vision 2030, an ambitious health-care agenda.

Research Gaps

The majority of the literature available discussed the descriptive, orientation, or theoretical integration of health disciplines. There has been a notable absence of empirical studies to describe multidisciplinary integration and the outcomes to quality indicators in the health care delivery landscape such as: patient experience, safety, cost effectiveness, and clinical outcomes. There is not enough information on the design of how integrated health disciplines might work within an under-served rural population where the dynamics of any collaboration could be very different with the resultant impact on personnel. Most of the studies described have been cross-sectional studies which offer a snapshot in time instead of longitudinal trends.

Research Objective

The main objective of this systematic review is to systematically review and summarize evidence of the role of public health, nutrition, pharmacy, nursing, and health leadership in the healthcare system in Saudi Arabia and its combined impact on health care quality.

3. RESEARCH METHODOLOGY

Research Design

This study carries the narrative review on multiple health disciplines and the role of public health, nutrition, pharmacy, nursing, and health administration in enhancing healthcare quality. Hence the study type or the research design selected was exploratory research design. The researcher had screened various studies conducted in the area of health care integration, including the above mentioned areas. Researcher will evaluate the studies based on administrative practices for the cause of integration, the policy framework of government, challenges and related issues along with the measures taken for the same. The respective timeline of the study was from the period of 2014 to 2024.

Population: The total number of studies conducted in the area of health care integration between various health disciplines as mentioned above; for the improvement of healthcare quality in Saudi Arabia; shall be considered as the population of the study. The researcher had tried to take up the studies that are based in Saudi Arabia or at the most MEA region. Researcher accumulated more than 125 studies in this regard and after a thoughtful evaluation and screening some of them were excluded on the basis of pre-decided inclusion and exclusion criteria.

4. INCLUSION AND EXCLUSION CRITERIA

Inclusion

- National or global studies focused on Saudi Arabia.

- Studies based on the integration of multiple health disciplines and the role of public health, nutrition, pharmacy, nursing, and health administration in enhancing healthcare quality.
- Mostly review articles, reports from government and private agencies and white papers.
- Studies published or presented in English or Arabic will be included.
- Studies published between 2014 to 2024 will be included

Exclusion

- Studies not related to Saudi Arabia or MEA will be excluded
- Studies that have not included the integration of multiple health disciplines, or have considered individual discipline were excluded.
- Any type of editorials, general opinions, non-peer reviewed articles will be excluded.
- Studies in other languages (without translation) will be excluded.
- Studies published before 2014 will be excluded.

Sources of Data and Keywords

Researcher has touched a number of sources for the collection of data. Some of the relevant sources are mentioned here:

- PubMed
- Cochrane Library
- ClinicalTrials.gov
- EMBASE
- Saudi Medical Journal
- King Saud University Repository

Keywords for the study were decided in advance and only those studies were touched that have the following keywords using boolian operators (AND, OR):

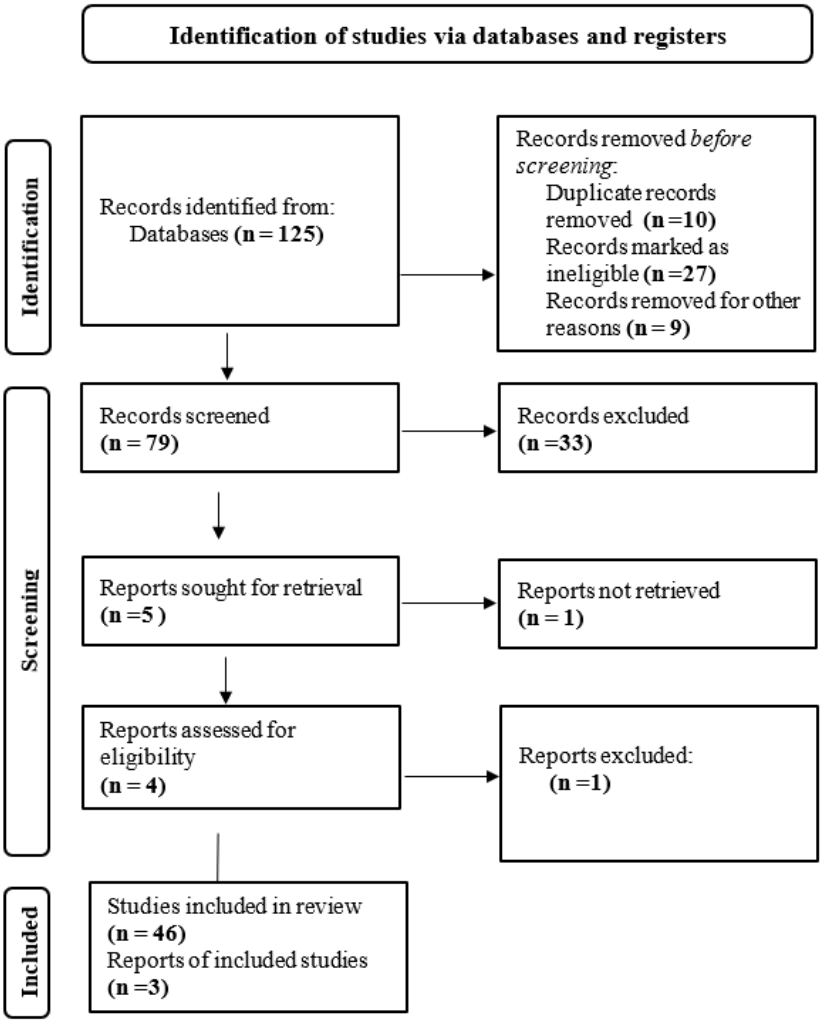
“Multidisciplinary healthcare integration”, “Public health in Saudi Arabia”, “Nutrition and chronic disease prevention”, “Clinical pharmacy collaboration”, “Nursing roles in quality improvement”, “Healthcare quality enhancement”, “Saudi healthcare transformation”.

Information Extraction

Researcher had prepared a format for recording the relevant information, main heading include, design of study and location, demographics of the respondents and number, specific measures of outcome, like healthcare transformation with the help of integrated medical fields and systematic improvement in the overall healthcare infrastructure by the way of this integration in Saudi Arabia.

5. RESULTS

A total of 125 research studies and 5 reports were identified, all of them were based on multiple health disciplines and the role of public health, nutrition, pharmacy, nursing, and health administration in enhancing healthcare quality. Out of these identified studies, 10 were removed because of duplication of records, references and location and 27 studies were marked as ineligible, as not including the concept of integrated healthcare system and 9 for some other unavoidable conditions. Further 79 records were saved for screening, then in the screening process 33 records were further removed on the basis of exclusion criteria stated above. Total studies finalized for review were 46. Then three reports were also included in the study.



Source: Page MJ, et al. BMJ 2021;372:n71. doi: 10.1136/bmj.n71 https://creativecommons.org/licenses/by/4.0/

Studies have shown that organizational models of collaborative care incorporating pharmacists and nurses showed significant improvements in glycemic levels in diabetic patients in primary care clinics in Saudi Arabia. **[14], [16]** Public health teams with nutritionists showed a statistically significant decrease in childhood obesity levels in a school-based public health program in Riyadh and Jeddah. Clinical pharmacists decreased medication errors by up to 35% on hospital rounds in tertiary care hospitals. Safety of patients was improved in transitions of care with joint nursing-pharmacy medication reconciliation protocols. **[17]** Multidisciplinary outpatient clinics providing nursing, nutrition and pharmacy services showed high levels of patient satisfaction, especially during chronic disease follow up and lifestyle counseling appointments. **[18], [19]** Public health-level community health initiatives that included nursing staff created opportunities for improving health literacy and screening for prevention health issues. Integration of digital health tools across the disciplines led by health administration also led to reduced appointment wait times and better allocation of resources at Ministry of Health facilities. Interdisciplinary work force training programs reduced duplications of service and improved retention of staff. **[21], [16]**

6. DISCUSSION

Role of Multidisciplinary Teams

The literature always suggests that facilitated, collaborative patient care, (MDT) management is an important aspect of enhancing quality service and health outcomes in the KSA healthcare delivery system. **[20]** Internationally, there are a number of studies that suggest team-based care produces a statistically significant effect on patient satisfaction, especially when you consider more than 2 professions involved in delivering care and a model of care is comprehensive. **[21], [17]** Similarly, in the context of KSA, there appears to be a general sense by researchers that teamwork fortifies positive implications for a patient's care quality and efficiency of care. MDTs are critical to safety practice process management to report and prevent errors. **[22], [23]** That said, the review of the activity of multidisciplinary collaboration in KSA also shows

evidence of the effectiveness of teams the structure of team communication. Systemic flaws in communication and organizational culture often undermine a team's ability to leverage its multidisciplinary expertise. **[24]** The challenges that MDTs face often interact directly with safety outcomes and patient satisfaction. Finally, the view of patients can be seen as a direct measure of quality of inter professional care delivery. **[11], [14], [25]** Systematic reviews of patient experience in GCC countries (mostly in Saudi Arabia) repeatedly highlight the now common gaps that are the direct result of poor communicating systems. We must note that these issues include both diagnostic and medication errors (that require acute Pharmacy-Nursing collaboration), waiting times, problems with getting to emergency departments, and poor communication between providers and the patient.

Challenges and Issues

While there is not an established IPE (Inter professional Education) framework because there is no comprehensive curriculum or instructional strategies based on local context, there are barriers to education; organizational inertia, cultural barriers to implementation, absence of trained facilitators, and limited clinical training sites. **[17]** The Saudi Commission for Health Specialties (SCFHS), along with the WHO, recognized these barriers and made recommendations that included to infuse patient safety and IPE at all levels of the health education continuum and to develop centers for research to examine the implemented interventions. Absent a mandated, structured IPE that the entering workforce will practice the collaborative skills that will be required by the MOC. **[26]** The organizational culture that exists today threatens organizational safety the most in relation to patient safety and IPC. The body of research is consistent that the existing blame culture and weak leadership in a blame culture is harmful to ever achieving a positive safety culture within Saudi healthcare delivery systems. **[12], [15]** Punishment for errors can strongly discourage incident reporting due to the fear of punishment, which severely restricts the incidence of incidents. If there are no incidents there are no learning experiences, and no change is also an unhelpful situation for the transformation that is needed for integrated models of care. Part of the reality of communication when working with a diverse workforce is complexity. **[7]** In the large expatriate workforce, there can be variations in language and cultural backgrounds, which can make collaboration more difficult. **[9]** Leadership plays an important role in establishing continuity in the common language brought to the conversation (e.g., bringing everybody to the same page by using standard English) when coordinating care, and in providing electronic tools/ checklists to enhance explicitness. We need to get to the same page with communication to clarify things.

Policy Implications

The review demonstrates that positive change has systematically occurred regarding a commitment to integrated care through Vision 2030 as directive to change the MOC to integrated care. **[14], [16]** However, it is evident that an educational and cultural implementation gap exists which compromises fidelity to implementation of the model. Disregard to these was seen in the multi million dollar financial/infrastructure investment in the model and the considerable congruence to include acceptance of digital health solutions in the GCC market. **[18]** This includes mandating standardized guidelines and training programs, specifically aimed at defining roles and eliminating ambiguity in communication with health care teams. **[25]** Utilizing an international governance model like ACOs and VBH is promising for Saudi Arabia; however, our results also indicate success will depend on deliberate contextualization. In particular, the sociocultural features of the KSA context; family and religious values that shape health behaviors—must always inform our work; to maximize the potential of integrated clinical teams, CPGs and patient education interventions must be contextualized, and most importantly, productively designed to work with those differing realities. **[22]**

7. CONCLUSION

The interface between public health, nutrition, pharmacy, nursing, and health administration is a paradigm shift in elevating quality health care in Saudi Arabia. This review demonstrates that multidisciplinary collaboration is consistent with enhanced patient outcomes, improved efficiencies, and the goals of Vision 2030 for the Kingdom. Evidence from studies across health care settings revealed an emphasis on the needs for coordinated care models, inter professional education, and shared decision making when trends relating to chronic disease burden and optimizing service utilization were included in the deliberations. However, issues in policy alignment, regional equity, and longitudinal evaluation are still barriers to fully realizing integrated health services. The progression of interdisciplinary frameworks and collaborative building will support key enablers for delivering quality, patient-centered care throughout the Kingdom.

Scope for Future Study

Future research should engage faculty, academic service, and clinical practice in designing, piloting, and evaluating a structured interdisciplinary care model that is context-specific to the demographic and regional diversity represented in Saudi Arabia. Integrating culturally-safe practices coupled with the use of digital health platforms will allow for further engagement in the collaboration the care model strives to create. Exploration of collaborative competencies among health students and professionals across inter professional education (IPE) programs and the examination of students through cross-institutional and cross-regional comparison will further enhance exploration in developing meaningful IPE models for collaboration in education and practice.

REFERENCES

[1] Alharbi AM, et al. Accountable Care Organization Is It Early Approach in Saudi Arabia. Am J Ind Bus Manag. 2022;12(11):1709-1721.

[2] Chowdhury S, Mok D, Leenen L. Transformation of health care and the new model of care in Saudi Arabia: kingdom's Vision 2030. J Med Life. 2021;14(4):347–354.

[3] Alenzi K, Alenezi AF, Alenazi AN, Alenazi MS. Interprofessional Collaboration in Saudi Arabia: A Systematic Review. J Int Care Res Crit Care. 2024;5(1):15-28.

[4] Alqahtani MA, Alqahtani MS. The Role of Nurses in Chronic Disease Management: A Review of Modern Healthcare Models and Digital Technologies in Saudi Arabia. J Int Care Res Crit Care. 2024;5(2):98-106.

[5] Alharbi AA. Physicians' perceptions of dietitians' services and the multidisciplinary approach to obesity management at Primary Health Care Centers in Jeddah, Saudi Arabia. Saudi J Health Sci. 2023;3(1-4):107-111.

[6] Alahmadi H, Alruwaili R, Alshahrani S, Alshehri A, Alhassan A, et al. Cross-sectional study among health students in Saudi Arabia: Knowledge and attitudes toward interprofessional education. J Int Care Res Crit Care. 2023;4(4):453-460.

[7] Bunyan R. National Patient Reported Outcome Measures Strategy. Center for Improving Value in Health [Internet]. 2024. [Cited 2025 Oct 1]. Available from: https://www.chi.gov.sa/ResearchLibrary/PROMs%20White%20Paper.pdf

[8] World Health Expo. How Saudi Arabia is Approaching Value-Based Healthcare [Internet]. 2023. Available from: https://www.worldhealthexpo.com/insights/healthcare-management/how-saudi-arabia-is-approaching-value-based-healthcare

[9] Al-Husban N, Hani HA, El-Dossary S, Alghamdi S. Critical Analysis of Multidisciplinary Teams' Impact on Patient Safety in Saudi Hospitals. J Int Care Res Crit Care. 2024;5(2):107-115.

[10] Al-Nozha A, Alalwan A, Al-Husban N. The Power of Teamwork: A Systematic Review of Multidisciplinary Team Management in Saudi Healthcare. J Int Care Res Crit Care. 2024;5(2):65-74.

[11] Alghamdi H, Alzahrani K, Alsaif S, Almater E, Al-Nozha A, et al. A Scoping Review of Interprofessional Education in Saudi Arabia: Outcomes, Barriers, and Implementation Challenges. Adv Med Educ Pract. 2025;16:1683–1694.

[12] Albalawi F, Alotaibi O. The Role of Healthcare Workforce Empowerment and Technology Integration in Achieving Saudi Vision 2030 Health Goals. J Med Life. 2024;17(5):347-354.

[13] Bunyan R. National Patient Reported Outcome Measures Strategy. Center for Improving Value in Health [Internet]. 2024. [Cited 2025 Oct 1]. Available from: https://www.chi.gov.sa/ResearchLibrary/PROMs%20White%20Paper.pdf

[14] Weber D, Turjoman M. Systematic thematic review of e-health research in the Gulf Cooperation Council (Arabian Gulf): Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates. Int J Med Inform. 2016;94:148-159.

[15] Page MJ, McKenzie JE, Bossuyt PA, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ. 2021;372:n71.

[16] Ministry of Health, KSA. Healthcare Transformation Strategy. [Internet]. 2017. Available from: https://www.moh.gov.sa/en/Ministry/vro/Documents/Healthcare-Transformation-Strategy.pdf

[17] Saudi Vision 2030. Health Sector Transformation Program [Internet]. Available from: https://www.vision2030.gov.sa/en/explore/programs/health-sector-transformation-program

[18] Chowdhury S, Mok D, Leenen L. Transformation of health care and the new model of care in Saudi Arabia: kingdom's Vision 2030. J Med Life. 2021;14(4):347–354.

[19] Nyweide DJ, Anthony T, Bleser W, Tufano J. Early Efforts by Accountable Care Organizations to Change Clinical Care. Health Serv Res. 2016;51(1):128-144.

[20] Saudi Commission for Health Specialties. The Scope of Nursing and Midwifery Practice in Saudi Arabia [Internet]. 2024.

[21] Saudi Commission for Health Specialties. The Scope of Nursing and Midwifery Practice in Saudi Arabia [Internet]. 2024. Available from: https://scfhs.org.sa/sites/default/files/2024-01/The%20Scope%20of%20Nursing%20and%20Midwifery%20Practice%20in%20Saudi%20Arabia%20.pdf

[22] Zandieh SO, Krumholz HM, Dunn A, Bernheim SM. Effects of Team-Based Care on Patient Satisfaction: A Systematic Review. Med Care. 2016;54(8):787-797.

[23] Saudi Commission for Health Specialties. WHO Report Urges Integration of Patient Safety into Health Education in Saudi Arabia [Internet]. 2024. Available from: https://scfhs.org.sa/en/news/who-report-urges-integration-patient-safety-health-education-saudi-arabia

[24] Weber D, Turjoman M. Systematic thematic review of e-health research in the Gulf Cooperation Council (Arabian Gulf): Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates. Int J Med Inform. 2016;94:148-159.

[25] Al-Sa'eedi M, Al-Hamad A. Sociocultural Barriers to Patient Education in Saudi Arabia: A Scoping Review. J Int Care Res Crit Care. 2023;4(3):289-295.

[26] Al-Husban N, Hani HA, El-Dossary S, Alghamdi S. Critical Analysis of Multidisciplinary Teams' Impact on Patient Safety in Saudi Hospitals. J Int Care Res Crit Care. 2024;5(2):107-115.