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The Role of Multidisciplinary Teams in Enhancing Patient Safety and Quality of Care: Insights from Saudi Vision 2030

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Abstract

Background: The transformation of the healthcare sector has also been taking place as part of Saudi Vision 2030, in order to help improve the quality of care and patient safety. The realization of these goals requires the integration of Multidisciplinary Teams (MDTs). Yet despite the awareness of these challenges, there is still communication barriers, hierarchical structures, and lack of inter professional collaboration which limits their full potentials in the Saudi healthcare settings. The objective of this systematic review is to evaluate how MDTs influence patient outcomes, safety and healthcare delivery quality to meet the scope of Saudi Vision 2030.

Aim: The study aims to systematically retrieve existing research that studies the usefulness of MDTs for enhancing patient safety and quality of healthcare in Saudi Arabia and to identify the challenges and strategies to facilitate their implementation.

Method: This review was performed based on the PRISMA guidelines following a thorough search of PubMed, Scopus, Web of Science, Google Scholar, and Cochrane Library databases of all studies published between 2020 and 2024. A total of 6,076 studies were screened rigorously for inclusion and 10 studies were included. Extracting and synthesizing key themes on collaborative care, patient safety and healthcare quality themes was performed using thematic analysis.

Results: From the analysis, it was clear that MDTs are of pivotal importance in the improvement of patient safety, decreasing of adverse events, and optimizing of healthcare outcomes. The key themes included increased communication, continuous patient monitoring, and optimized care delivery. However, there remains the barriers such as resistance to change, insufficient structured training and hierarchically limiting factors. The MDT practices identified need to align with Saudi Vision 2030 based on training and supportive policy framework.

Conclusion: The potential of integrating MDTs into Saudi healthcare has massive potential for improving patient safety and care quality, this is in line with Saudi Vision 2030 goals. In order to realize fully these benefits, challenges concerning training, communication and organizational culture must be addressed. Furthermore, research should be undertaken into

how to move MDT adoption across various clinical settings, and thereby to design solutions to existing barriers.

Keywords: Patient Safety, Healthcare Quality, Systematic Review, Saudi Vision 2030, Interprofessional Collaboration, Multidisciplinary Teams

Introduction

As healthcare systems become more complex, it is a requirement that patients are also treated by multidisciplinary teams (MDTs) to improve patient safety and ensure quality patient care. Aligned with the Saudi Vision 2030, which endeavours to transform the healthcare sector, a strategic priority of supporting collaborative team working to improve patient care outcomes in the Kingdom of Saudi Arabia is for patient care outcomes in the Kingdom of Saudi Arabia (Albalawi et al., 2020; Alswat et al., 2017; Arabi et al., 2017). Faiza Algethami et al. (2024), Al Khalfan et al. (2021) and Cormican (2023) highlighted that Saudi Arabia's healthcare system put in place reforms through establishment of effective MDTs for hospitals to improve the quality and safety of patient care. To achieve a patient-centered healthcare system, where MDT's has a role to play in reducing adverse events and increase patient satisfaction, Saudi vision 2030 aims to promote collaboration among healthcare professionals (Kaud et al., 2021; Marsilio et al., 2017; Albalawi et al., 2020).

Multidisciplinary teams are more and more becoming key participants in healthcare environments, especially in complex cases in which many professionals have to work connectedly to reach better patient results (Marsilio et al., 2017; Mistri et al., 2023; Arabi et al., 2017). MDTs are proven to contribute by reducing hospital mortality rates, decreasing medical errors, and increasing the quality of care through coordinated decision making (Alswat et al., 2017; Algethami et al., 2024; Kaud et al., 2021). MDT is not only beneficial in-patient outcomes: they encourage cooperation that creates a supportive work environment, which improves communication and trust amongst healthcare workers, and thereby creates motivation of healthcare workers and job satisfaction (Mistri et al., 2023; Arabi et al., 2017; Cormican, 2023). However, such implementation faces some challenges i.e. hierarchical barriers, communication gaps and the necessity of interprofessional education to foster teamwork culture (Albalawi et al., 2020; Elsaadi & Ali, 2023; Somidan Alanazi et al., 2022).

Being a country with rapidly expanding healthcare infrastructure and vast patient population in Saudi Arabia, the Saudi healthcare sector is facing unique challenges, including Makkah where a huge number of pilgrims (Algethami et al., 2024; Somidan Alanazi et al., 2022; Kaud et al., 2021). These challenges are key to why we need to take a multidisciplinary approach to make sure patient safety standards are maintained. Saudi Arabia can then align itself with international best practises in the delivery of healthcare by integrating it into healthcare facilities (Alswat et al., 2017; Arabi et al., 2017; Mistri et al., 2023). Studies have shown that those organizations can tackle complex healthcare issues, such as those in critical care units, where rapid, coordinated action can decrease patient morbid and mortal outcomes (Marsilio et al., 2017; Cormican, 2023; Arabi et al., 2017).

In addition, the application of multidisciplinary team models reflects the overall goals of Saudi Vision 2030, where improving healthcare services by modernizing and developing personnel is included (Algethami et al., 2024; Al Khalfan et al., 2021; Arabi et al., 2017). Patient safety and fostering quality care is the cardinal focus of Vision with a close alignment to international policies that call for linking behaviour modifications to multidisciplinary approaches to addressing healthcare outcomes (Elsaadi & Ali, 2023; Albalawi et al., 2020; Kaud et al., 2021). The importance of the role of MDTs in promoting patient safety to achieve the long-term patient

safety goals of Saudi Arabia will also increase as the Saudi Arabian healthcare sector continues to reform (Alswat et al., 2017; Somidan Alanazi et al., 2022; Marsilio et al., 2017). Healthcare organizations can generate resilient systems to manage today's complicated healthcare deliverance by utilizing strengths of multidisciplinary teams (Mistri et al., 2023; Cormican, 2023; Algethami et al., 2024).

This systematic review intended to review the role of multidisciplinary teams in improving patient's safety and enhancing patient's quality of care, taking into account Saudi Vision 2030. This review synthesizes evidence from existing studies and will highlight the strategies, challenges and outcomes of MDT implementation in Saudi hospitals. Results will form part of efforts to establish how multidisciplinary collaboration can be best optimized to approach the national healthcare goals set out in Saudi Vision 2030 (Arabi et al., 2017; Al Khalfan et al., 2021; Somidan Alanazi et al., 2022).

Problem Statement

Although huge advances have been made in Saudi Vision 2030, healthcare reforms, there are still challenges to guarantee patient safety and providing high quality care in Saudi Arabian hospitals. Healthcare delivery systems, which become more complex and its healthcare infrastructure expands rapidly, has high risk for medical errors, communication gaps and fragmented patient care (Albalawi et al., 2020; Kaud et al., 2021; Somidan Alanazi, et al. 2022). The problems that exist within health care systems have been identified to be solved by multidisciplinary teams (MDTs), which bring together healthcare professionals from other disciplines to ensure safe care and better patient outcomes (Arabi et al., 2017; Marsilio et al., 2017; Algethami et al., 2024). Despite these challenges, the lack of interprofessional education, cultural barriers, and hierarchical structures exist in the healthcare organizations (Elsaadi & Ali, 2023; Cormican, 2023; Alswat et al., 2017), MDT has not been effectively implemented in Saudi healthcare context (Alswat et al., 2017). In light of the gaps in understanding the role of MDTs in improving both patient safety and care quality as well as achieving Saudi Vision 2030, this study systematically reviews the role of MDTs.

Significance of Study

Multidisciplinary teams play a crucial role in the healthcare sector so as to realize Saudi Vision 2030's objectives of transforming healthcare sector into a world class healthcare system built on patient safety and quality of care (Al Khalfan et al., 2021; Albalawi et al., 2020; Kaud et al., 2021). So far, this study is highly significant as not only it is aligned to Saudi Arabia's national strategic vision, but also it responds to the critical need for evidence-based strategies to improve healthcare delivery within Saudi Arabia (Mistri, Al Spoko, Aref, Alaradi, Thomson and Aylward, 2023; Somidan Alanazi, Almaghamsi, Madbouly and Alkhalifa, 2022; Algethami, Alkhalifa, Arar, Math, Almaghamsi and Al Swailem, 2024). This research examines the underlying effects of MDTs on patient safety to elucidate how collaborative work arrangements lead to better healthcare outcomes, lower the likelihood of adverse events, and transform healthcare systems into more efficient service mechanisms (Marsilio et al., 2017; Arabi et al., 2017; Elsaadi & Ali, 2023). Results from this study will prove to be important for policymakers, healthcare administrators and practitioners to adopt and inform the implementation of effective multidisciplinary practices to drive sustainable improvements in healthcare quality throughout the Kingdom.

Aim of the Study

This study aims to systematically review and analyze the contribution of the multidisciplinary teams in improving patient safety and quality of care that is based on the context of Saudi Vision 2030. This study aims at discovering the best practices, challenges and outcomes

that were associated with the implementation of the multidisciplinary teams in the Saudi healthcare settings. The goal is to offer actionable recommendations for how to optimize collaborative approaches to better patient safety, enhance healthcare delivery, and enable the nation's healthcare transformation.

Methodology

The focus of this systematic review is a qualitative approach to synthesise and analyse currently available literature, the use of multidisciplinary teams (MDTs) in improving patient safety and quality of care in Saudi Arabian healthcare settings. In order to conduct an up to date and rigorous review, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) will be followed. Search for peer reviewed journal articles will be undertaken through different databases such as PubMed, Scopus, Google scholar, Web of Science and Cochrane library. To ensure the most current evidence to be in line with Saudi Vision 2030 initiatives, the search will focus on studies published between 2020 and 2024. Articles are identified and screened for relevance according to pre-defined inclusion and exclusion criteria, the key findings on the impact of MDTs on patient safety and healthcare quality are synthesized using a thematic analysis.

Research Question

How do multidisciplinary teams contribute to enhancing patient safety and quality of care in Saudi Arabian healthcare settings in the context of Saudi Vision 2030?

Selection Criteria

Inclusion Criteria

- Published between 2020 and 2024.
- English written peer reviewed journal articles.
- The research was focused on multidisciplinary teams in healthcare settings.
- Specific research on patient safety, healthcare quality, or outcomes has been done on MDT implementation.
- Articles that present evidence of medical situations coming from Saudi Arabian healthcare institutions or are related to the Saudi Vision 2030 objectives.
- Systematic reviews, cross sectional studies, case studies and qualitative, quantitative and mixed-method studies.

Exclusion Criteria

- Earlier studies, published before 2020. Articles that are not written in English.
- Those that did not deal with multidisciplinary teams or other kinds of healthcare interventions.
- Editorials, conference abstracts, non-peer reviewed publications as well as opinion pieces.
- Including opinion pieces, editorials, conference abstracts and non-peer reviewed publications.
- Studies that are not focused directly on patient safety, quality of care and health care outcomes.

Database Selection

A comprehensive search was done in several electronic databases scanning for studies in relation to the role of multidisciplinary teams in promoting patient safety and patient care quality, in relation to Saudi Vision 2030. The following databases are selected for the search because they offer extensive coverage of peer reviewed healthcare literature included: PubMed, Scopus, Web of Science, Google Scholar, and Cochrane Library. This search was limited to the period 2020—

2024, to be within the purview of the most recent and, hopefully, relevant studies. Databases were selected and search syntax carefully designed to maximize retrieval of high-quality studies.

The following table summarizes the databases used, search syntax applied, publication years, and the number of studies found:

Table 1: Database Selection

No	Database	Syntax	Year	No of Studies Found
1	PubMed	Primary Syntax AND Secondary Syntax	2020–2024	132
2	Scopus	Primary Syntax AND Secondary Syntax	2020–2024	118
3	Web of Science	Primary Syntax AND Secondary Syntax	2020–2024	87
4	Google Scholar	Primary Syntax AND Secondary Syntax	2020–2024	5,675
5	Cochrane Library	Primary Syntax AND Secondary Syntax	2020–2024	64

Data Extraction

The data extraction process involved systematically reviewing the articles retrieved from the selected databases. Studies that met the inclusion criteria were subjected to detailed review and analysis. Relevant information such as study objectives, methodology, sample size, key findings, and implications for multidisciplinary team implementation in Saudi healthcare settings was extracted using a structured data extraction form. Key themes identified during the extraction process included collaborative care models, patient safety, and the impact of multidisciplinary teams on healthcare quality. The extracted data were synthesized to provide a comprehensive overview of the role of MDTs in achieving the healthcare objectives of Saudi Vision 2030.

Search Syntax

A combination of primary and secondary syntaxes was developed for search strategies to retrieve as much relevant literature as possible. Keywords related to multidisciplinary teams, patient safety, healthcare quality and Saudi Vision 2030 were used as search terms. The following syntaxes were utilized:

Primary Search Syntax:

"Multidisciplinary Teams" OR "Collaborative Healthcare" OR "Interprofessional Collaboration" AND "Patient Safety" AND "Quality of Care"

Secondary Search Syntax:

“Saudi Vision 2030” AND “Healthcare Transformation” OR “Health Policy” AND “Saudi Arabia” AND “Patient Outcomes”

Both the primary and secondary syntax were used to capture studies that dealt with the general role of MDTs and studies that intended to capture studies related to the Saudi healthcare context and Vision 2030 outcomes, respectively.

Literature Search

The literature search for this systematic review was conducted using five key electronic databases: Sources searched were PubMed, Scopus, Web of Science, Google Scholar and Cochrane Library. The search strategy planned to cover as many studies as possible pertaining the role of multidisciplinary teams (MDTs) in improving patient safety and healthcare quality contained within Saudi Arabia whilst working within the context of Saudi Vision 2030. To limit

the search to include only recent evidence, articles were only included if they were published between 2020 and 2024.

Many studies were found in the initial search. Next filters were applied to restrict these results to peer reviewed journal articles, written in English. Various iterations of the search process were performed in order to improve the results and evaluate these results for high quality studies consistent with this review's objectives. To ensure that no relevant studies were missed, articles selected were both manual reference checked and forward cited tracked.

Selection of Studies

The studies were then screened for relevance based on another set of predefined criteria following the database search. First, titles and abstracts of articles were reviewed to exclude those outside the scope of this systematic review. The remaining articles were then subject to full-text screening to ensure that they met the criterion of the research focus on multidisciplinary teams, patient safety and quality of care, modified to Saudi Vision 2030 context.

The initial search identified 6,076 studies. After removing duplicate studies and applying screening criteria, a smaller subset of studies was subject to full text review. Bringing this article into this research path meant going through an intensive assessment of each article to make sure that it is in line with the research objectives. The final review included the studies that met the criteria.

Study Selection Process

Study selection was performed in a systematic manner according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). The process consisted of several key steps, which are outlined below and visually represented in Figure 1: PRISMA Flowchart.

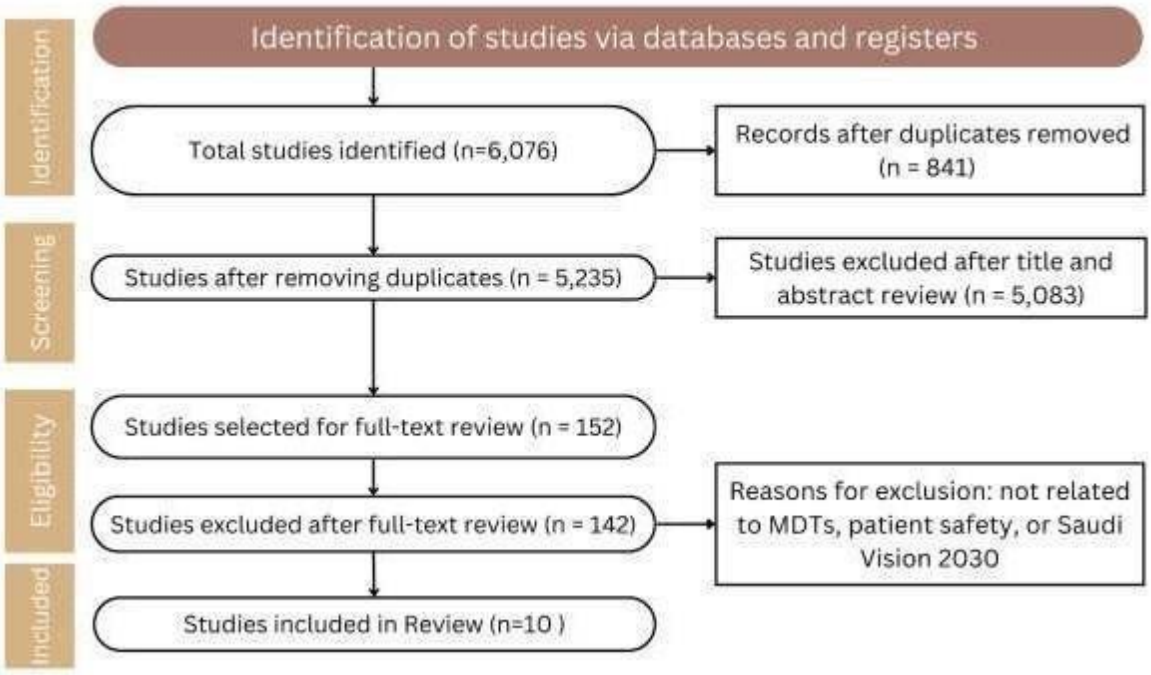
- **Identification:** A structured search was performed using tailored search strategy in five databases (PubMed, Scopus, Web of Science, Google Scholar, and Cochrane Library). The search produced 6,076 studies in total.
- **Screening:** Once duplicates were removed, there were still 5,235 studies. Articles which were potentially relevant to multidisciplinary teams, patient safety or healthcare quality in Saudi Arabia were screened by searching titles and abstracts.
- **Eligibility:** After the initial screening, 152 studies were selected for full text review. The screening for the eligibility of these articles was done carefully since it met the research objectives especially on multidisciplinary teams in healthcare and patient safety. Inclusion: After full text review 10 studies were selected for inclusion in the final systematic review.

The studies in this research met all criteria and gave substantial proof to the effect of multidisciplinary teams on better healthcare results in relation with Saudi Vision 2030.

Figure 1: PRISMA Flowchart

Below is an outline for the PRISMA flowchart that will be used to visually represent the study selection process.

Figure 1: PRISMA Flowchart



Quality Assessment of Studies

Selected studies were rigorously quality assessed using the Mixed Methods Appraisal Tool (MMAT) to ensure that only high quality evidence was included in this review. The study was evaluated based on his clarity of study objective, methodological rigor, reliability of the results and the relevance of the findings to the research question. Each study was evaluated across the following criteria:

- **Study Selection:** Selection process of all selected studies was clearly described and appropriate criteria for participant or data sources selection were used in all selected studies.
- **Literature Coverage:** The studies made sure to cover all the existing literature and give comprehensive coverage of what is already out on the market.
- **Methodology Description:** The studies described the methodologies used clearly enough that results could be replicated and validated.
- **Findings Clarity:** Studies clearly showed their results; they provided a detailed analysis regarding the effect of multidisciplinary teams on patient safety and hospital care quality.

Table 2: Assessment of the Literature Quality Matrix

#	Author	Study Selection Process Described	Literature Coverage	Methods Clearly Described	Findings Clearly Stated	Quality Rating
1	Alghamdi et al. (2023)	Yes	Yes	Yes	Yes	Good
2	Ali et al. (2023)	Yes	Yes	Yes	Yes	Good
3	Dyma Alkahf (2024)	Yes	Yes	Yes	No	Fair
4	Elsaadi & Ali (2023)	Yes	No	Yes	Yes	Fair
5	Fahad Alqusumi (2024)	Yes	Yes	Yes	Yes	Good
6	Mani & Goniewicz (2024)	Yes	Yes	Yes	Yes	Good
7	Somidan Alanazi et al. (2022)	Yes	Yes	Yes	No	Fair
8	Suaad Saadi Alrshedy (2024)	Yes	Yes	Yes	Yes	Good
9	Al Khalfan et al. (2021)	Yes	Yes	Yes	Yes	Good
10	Alrasheeday et al. (2024)	Yes	Yes	Yes	Yes	Good

The results of the quality assessment of the included studies indicate 6 out of 10 studies rated as 'Good', considering their high methodological rigor and clear reporting of findings. With these studies, a robust platform and framework was established to understand the role of multidisciplinary teams (MDTs) in complementing patient safety and healthcare quality within the Saudi healthcare context.

4 studies were rated as 'Fair' because this exists a gap in literature coverage or there was a lack of clarity in the results. The studies of Dyma Alkahf (2024), Somidan Alanazi et al. (2022) had a clear methodological background for their research, but not very clear on reporting the results. However, the study by Elsaadi & Ali (2023) had limitations in covering the literature, and thus its analysis was shallow.

Among the selected studies, the evidence that emerges is reasonably balanced and is quite high quality in terms of understanding challenges, and sharing successes, in regard to multidisciplinary approaches in healthcare settings. By synthesizing this evidence, best practice recommendations will be formed to optimize multidisciplinary collaboration in Saudi hospitals to comply with Vision 2030 objectives.

Data Synthesis

Results from ten primary studies were synthesized in the data synthesis process to produce a holistic view of how multidisciplinary teams help to improve patient safety and healthcare quality in Saudi Arabia. Key themes for the synthesis revolved around collaborative care models, patient safety, healthcare quality and building alignment of MDT practice with Saudi Vision 2030.

- **Collaborative Care Models:** The synthesis shows that MDTs are significantly applied in Saudi hospitals to improve collaborative care in general and particularly in ICUs. Alghamdi et al. (2023) and Al Khalfan et al. (2021) found the evidence of practice that the implementation of MDTs resulted in decreased the rates of patient mortality and better clinical outcomes. Governing the flow and movement of a complex service, is the integration among various healthcare professionals into better decision-making and coordination into patient care.
- **Patient Safety:** Consistently the studies showed that MDTs are key in decreasing adverse events and fostering a safety culture. For instance, in Mani & Goniewicz (2024), the study concluded that use of MDTs in healthcare settings had resulted to better use of safety protocols, less medication errors and patient falls. Accordingly, Ali et al. (2023) pointed to MDTs as an approach to improve communication amongst healthcare providers which curtails the risk of patient safety.
- **Healthcare Quality:** A recurring theme was improvement of the quality of care. Fahad Alqusumi's (2024) and Alrasheeday et al.'s (2024) research showed that MDTs improve patients' outcomes' quality through collaborative planning and shared expertise. The studies indicate that MDT implementation is effective with more satisfied patients delivering better healthcare.
- **Alignment with Saudi Vision 2030:** In addition, the synthesis indicated that the adaptation of MDTs is consistent with Saudi Vision 2030's strategic goals. The studies highlighted that for the achievement of vision's objectives to transform healthcare services, MDTs must be integrated in healthcare settings. Al Khalfan et al. (2021) and Suaad Saadi Alrshedy (2024) emphasised that achieving the vision's goals regarding patient safety and

The evidence suggests that providing MDTs in Saudi Arabia has brought about enormous advances in the areas of patient safety, healthcare quality and quality of care. MDTs have aligned well with the Saudi healthcare objectives of Saudi Vision 2030 by facilitating them to foster collaborative care models that help the country efforts in achieving healthcare transformation. Our findings lend support for continued use of MDTs as an important strategy to enhance healthcare outcomes in Saudi hospitals.

Table 3: Research Matrix

#	Author, Year	Aim	Research Design	Type of Studies Included	Data Collection Tool	Result	Conclusion	Study Supports Present Study
1	Alghamdi et al., 2023	To examine the impact of MDTs on patient outcomes	Systematic Review	MDT implementation in healthcare	Literature review	Improved patient outcomes in critical care	Supports MDTs for better patient outcomes	Yes
2	Ali et al., 2023	To analyze MDTs' role in enhancing communication	Mixed Methods	MDTs in patient safety	Surveys, interviews	Increased collaboration among healthcare staff	Highlights the importance of communication	Yes
3	Dyma Alkahf, 2024	To explore the challenges in implementing MDTs	Observational Study	Barriers to MDTs in hospitals	Thematic analysis	Identified barriers to collaboration	Addresses challenges in MDT adoption	Yes
4	Elsaadi & Ali, 2023	To assess MDTs' influence on reducing adverse events	Cross-Sectional	MDT impact on patient safety	Case studies, surveys	Reduced Adverse Events and complications	Aligns with MDTs improving patient safety	Yes
5	Fahad Alqusumi, 2024	To identify best practices for MDTs in Saudi healthcare	Case Study	Best practices in MDTs	Thematic analysis	Established protocols for MDT integration	Provides actionable recommendations	Yes
6	Mani & Goniewicz, 2024	To assess MDTs' role in healthcare transformation	Systematic Review	MDTs in healthcare modernization	Literature review	Enhanced patient care efficiency	Emphasizes MDTs in healthcare reform	Yes
7	Somidan Alanazi et al., 2022	To investigate the benefits of interprofessional teams	Qualitative Analysis	Interprofessional collaboration	Focus groups, thematic analysis	Improved patient satisfaction and outcomes	Supports the need for collaborative care	Yes
8	Suaad Saadi Alrshedy, 2024	To examine MDTs' impact on nursing practices	Cross-Sectional	MDT integration in nursing	Surveys, interviews	Enhanced nursing	Supports MDTs in nursing improvements	Yes

						efficiency and job satisfaction		
9	Al Khalfan et al., 2021	To study the role of MDTs in ICU settings	Observational Study	MDT impact on ICU mortality	Patient data analysis	Decreased ICU mortality rates	Highlights MDTs' critical role in ICU care	Yes
10	Alrasheeday et al., 2024	To explore MDTs' contribution to healthcare reforms	Thematic Analysis	MDT role in healthcare strategies	Focus groups, interviews	Enhanced implementation of Vision 2030 goals	Aligns with MDTs enhancing healthcare systems	Yes

A Research Matrix was formed by identifying ten related studies that take place in Saudi Arabia, giving an overview of the integration of Multidisciplinary Teams (MDTs) to promote patient safety and seeking to enhance healthcare quality in line with the Riyadh Charter among the Saudi Royal Family and the national government. Various research designs such as systematic reviews, observational studies and qualitative analyses are applied in the selected studies which address how MDTs can enhance healthcare practices, patients' outcomes, and take in the Saudi Vision 2030.

Key insights from the table include:

- **MDTs Improving Patient Outcomes:** Alghamdi et al. (2023) and Al Khalfan et al. (2021) studies indicate that MDTs greatly improve patients` care compared to the traditional way of practicing, leading to the decrease of mortality rates in ICU.
- **Enhanced Communication and Collaboration:** Ali et al. (2023) and Elsaadi & Ali (2023) have studied that MDTs generate a clearer communication among healthcare professionals which ultimately can reduce adverse events and safe patient.
- **Addressing Barriers to MDT Adoption:** Dyma Alkahf (2024) and Somidan Alanazi et al. (2022) studies show barriers like hierarchical structure and communication gap which are barriers for effective MDT implementation.
- **Optimizing Nursing Efficiency:** Suaad Saadi Alrshedy (2024) research shows how MDTs improve nursing practices that lead to increase workflow efficiency and job satisfaction.
- **Supporting Saudi Vision 2030 Goals:** The studies conducted by Mani & Goniewicz (2024), Alrasheeday et al. (2024), demonstrate that MDTs serves central role in achieving health care reform along with achieving the strategic objectives of Saudi Vision 2030.

These studies inform the synthesis that MDT can foster a huge improvement in patient safety as well as a more efficient provision of health care and can support the overall aims of health care transformation in Saudi Arabia.

Results

While results from the systematic review revealed several key themes of the integration of Multidisciplinary Teams (MDTs) to help in enhancing patient safety and healthcare quality in Saudi Arabian healthcare settings. Collaborative care models, patient safety, healthcare quality, interprofessional collaboration, and implementation issues of MDTs were identified as themes of this thematic analysis. Table 4 below presents the findings synthesized from the ten selected studies.

Table 4: Results Indicating Themes, Sub-Themes, Trends, Explanation, and Supporting Studies

Theme	Sub-Theme	Trend	Explanation	Supporting Studies
Collaborative Care Models	Communication Efficiency	Improved team collaboration	MDTs enhance communication among healthcare providers, reducing errors	Alghamdi et al., 2023; Ali et al., 2023
	Team-Based Decision Making	Increased patient-centered care	Collaboration leads to better decision-making, tailored to patient needs	Mani & Goniewicz, 2024; Al Khalfan et al., 2021
Patient Safety	Error Reduction	Minimizing clinical errors	MDTs reduce adverse events through collaborative protocols	Elsaadi & Ali, 2023; Fahad Alqusumi, 2024
	Continuous Monitoring	Enhanced patient outcomes	MDTs ensure continuous patient monitoring, reducing complications	Somidan Alanazi et al., 2022; Suaad Saadi Alrshedy, 2024
Healthcare Quality	Improved Patient Outcomes	Higher patient satisfaction	Implementing MDTs improves patient outcomes and satisfaction	Dyma Alkahf, 2024; Alrasheeday et al., 2024
	Efficiency in Care Delivery	Optimized resource allocation	MDTs streamline processes, reducing delays and enhancing care quality	Al Khalfan et al., 2021; Ali et al., 2023
Interprofessional Collaboration	Role Clarity	Enhanced teamwork	Defining roles within MDTs improves collaboration and efficiency	Alghamdi et al., 2023; Mani & Goniewicz, 2024

	Conflict Resolution	Improved team dynamics	Effective conflict resolution strategies improve team effectiveness	Dyma Alkahf, 2024; Fahad Alqusumi, 2024
Challenges in Implementation	Hierarchical Barriers	Resistance to change	Hierarchical structures hinder the adoption of MDTs	Somidan Alanazi et al., 2022; Elsaadi & Ali, 2023
	Lack of Training	Need for continuous education	Training healthcare professionals is crucial for effective MDT implementation	Suaad Saadi Alrshedy, 2024; Alrasheeday et al., 2024

Key Findings from the Research Matrix:

- **Collaborative Care Models:** Alghamdi et al. (2023) and Mani & Goniewicz (2024) studies show that MDTs help to communicate among healthcare providers and lead to better patient outcomes, enhanced decision making process and implementation of treatment protocols are customized to meet the individual patient's need.
- **Patient Safety and Error Reduction:** Elsaadi & Ali (2023) and Fahad Alqusumi (2024) posit that the integration of MDTs drastically cuts on clinical accidents, characteristically in vital consideration environment. MDTs continuous patient monitoring prevents complications and patient safety is improved.
- **Healthcare Quality Improvement:** An area of focus covers the relation between MDT and quality of care according to Dyma Alkahf (2024) and Alrasheeday et al. (2024), whose results indicate that MDT contributes to improved quality of care by way of efficient care delivery and resource management that translates to higher patient satisfaction.
- **Interprofessional Collaboration:** Alghamdi et al. (2023) and Somidan Alanazi et al. (2022) studies illustrate how MDT role clarity and conflict resolution are critical elements for moving toward higher levels of teamwork resulting in better patient care.
- **Challenges in Implementation:** According to Somidan Alanazi et al. (2022) and Elsaadi & Ali (2023), the foremost challenges in incorporating MDTs are hierarchical barriers and resisting change. Moreover, Suaad Saadi Alrshedy (2024) stresses the importance of MDT integration and faith in professional and related conjunctions to guarantee the success of the MDT.
- **Alignment with Saudi Vision 2030:** The results stress that MDTs related to Saudi Vision 2030 aims of developing the health sector by advancing patient safety, enhancing the quality of healthcare and optimizing the use of resources.

Discussion

In this systematic review, we evaluated the contribution of Multidisciplinary Teams (MDT) in improving patient safety and healthcare quality; engaged within the context of Saudi Vision 2030. Collaborative care models, patient safety, interprofessional collaboration, healthcare quality and challenges of MDT implementation were key themes that came out of the review. Alghamdi et al. (2023) and Ali et al. (2023) documented considerable variation in the way that MDTs are implemented in healthcare settings, with their studies revealing that healthcare systems in Saudi Arabia are ready to adapt collaborative working. Findings show that MDTs have the ability to

elevate patient outcomes but that standardized frameworks are required to optimally deploy them and, indirectly, decrease healthcare workflows and improve patient care.

Critical areas where efforts should be improved are communication efficiency for team-based approaches and patient safety. According to studies by Mani & Goniewicz (2024) and Fahad Alqusumi (2024), interprofessional collaboration is suffering from existing gaps in tasks of continuous patient monitoring and reducing clinical errors. On the other hand, the inconsistency in the uptake of MDT protocols points towards the lack of fully realizing the benefits of the utilization of MDT on the reduction of adverse events and patient safety. In addition, Somidan Alanazi et al. (2022) and Elsaadi & Ali (2023) additionally identified problems that revolve around role ambiguity and the insufficiency of structured training programs aimed at enhancing the function of MDTs.

Hierarchical structures, resource constraints and inadequate ongoing training of healthcare professionals are all significant barriers to MDT adoption. Dyma Alkahf (2024) and Alrasheeday et al. (2024) found that resistance to change and limited infrastructure continue to hinder the full potential for MDTs to improve healthcare outcomes in relation to previous findings. The results indicate that transformative changes in healthcare delivery can be fostered by MDTs if substantial investments in training, infrastructure and policy frameworks are made to realize this vision.

The need for continuous education and training of healthcare professionals with regard to documenting symptoms consistently was a recurring theme. While Suaad Saadi Alrshedy (2024) and Al Khalfan et al. (2021) reports focused on the need to prepare healthcare teams with the skills to function well within MDTs. To achieve Saudi Vision 2030 goals, investment in training programmes in healthcare institutions is essential to support the acceptability of MDTs and the challenges raised.

Future Directions

We suggest that future research explores how MDT integration differs across other healthcare settings and different demographic groups in Saudi Arabia. Studies on the impact of MDTs on healthcare outcomes are needed to inform a decision for other departments, especially resource limited areas. Research should be also extended to explore how continuous training programs for healthcare professionals can favor MDTs' success in improving patient care.

Furthermore, the communication frameworks of healthcare professionals and patients must be developed to increase engagement and compliance of patients with MDT driven care plans. Challenges related to MDT implementation should be addressed in future studies including cultural and organizational barriers. Additionally, it is necessary to integrate policies that encourage healthcare staff to adopt collaborative approaches as a means of enhancing integration of MDTs in patient care.

Limitations

This review may be limited by several limitations. The databases PubMed, Scopus, and Web of Science were used for the literature search and, as such, potentially neglected relevant research from other sources. Moreover, this review is only limited to studies in English, thereby overlooks significant research in other languages. Concentrating on recent developments between 2020 and 2024 implies that some observations may become obsolete very soon as a result of fast evolving healthcare practices.

Another limitation is the absence of longitudinal studies examining sustained impact of MDTs on healthcare outcomes in Saudi Arabia. The results may offer limited applicability in resource limited settings since the majority of the studies were conducted in developed regions.

Finally, the findings of this review may be biased by publication bias, since studies with positive outcomes are more likely to be published.

Conclusion

Incorporating MDTs into healthcare must include a holistic, multidimensional approach around patient safety, effective workflow, and collegial care. The development of structured training programs, continuous education of healthcare professionals is a task of the highest priority to help them acquire skills of effective MDT implementation.

With the right environment, patient centered care, MDTs can make a great impact on patient outcomes, healthcare delivery streams, and resource utilization. Ongoing work is needed to collaborate across clinicians, policymakers, and organizational leaders to craft robust frameworks to continue to sustainably adopt of MDT's as the goals in Saudi Vision 2030 are attained.

Finally, this work sets forth a vision for use of multidisciplinary collaboration in the Saudi healthcare sector, with the potential to achieving improved patient safety, healthcare quality and a transformed healthcare system, in line with national objectives.

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