The Review Of
DIABETIC
STUDIES OPEN ACCESS

Multidisciplinary Team Management In Saudi Healthcare: A Systematic Review Of Evidence, Challenges And Opportunities

Suhail Rashad Ghazzawi[1] , Fahad Aboud Abdullah Alkahtani[2] Faisal Abood Abdullah Alqahtani[3] , Amirah Senaitan Alharbi[4] , Mohammed Abdullah Almutairi[5] , Abdullah Mofareh Alanazi[6] , Mahmoud Yousef Almuqaytib[7] , Mohammad Eid Aljehani[8] , Eman Majid Mansouri[9] , Faiz Alanazi[10] , Enaam Saeed Almustafa[11] , Safieah Hamza Melebari[12] , Daleen Marzouq[13] , Nawaf Athib Musharri Almutairi[14] Waheed Ahmed Yahya Madkhali[15], Hassan Abdu Ayyashi[16], Abdo Mohammed Ahmed Maswade[17]

[1]Umm Al-Qura University, Makkah, Saudi Arabia
[2]Ahad Rufaidah Hospital
[3]Khamis Mushait General Hospital
[4]King Saud University Medical City – King Khalid University Hospital
[5]King Fahad Medical City
[6]King Fahad Medical City (KFMC)
[7]Ministry of Defence, Armed Forces Hospital
[8]Ministry of Defence, Armed Forces Hospital
[9]Riyadh Specialized Dental Center, Riyadh Second Health Cluster
[10]Prince Sultan Military Medical City
[11]Anak General Hospital
[12]Alkhadra Primary Health Care Center, Makkah Health Cluster
[13]Hafar Al-Batin Health Cluster – Al-Baladiyah Primary Healthcare Center in Hafar Al-Batin
[14]Almatar Primary Health Care Centre
[15] Vector Control Center in Al-Ardah
[16] Vector Control Center in Al-Ardah
[17] Vector Control Center in Al-Ardah

Abstract

Background: Multidisciplinary team (MDT) management is central to improving patient outcomes and healthcare efficiency through collaborative practice. In Saudi Arabia, MDT implementation supports Vision 2030 goals of integrated and patient-centered care, yet organizational and cultural barriers continue to limit its full adoption.

Aim: This systematic review aimed to evaluate the existing evidence, challenges, and opportunities surrounding multidisciplinary team management within Saudi healthcare, highlighting its impact on patient outcomes, organizational efficiency, and healthcare transformation..

Method: Following PRISMA guidelines, five databases PubMed, Scopus, CINAHL, ScienceDirect, and Google Scholar were searched for studies published between 2021 and 2025. After screening 145 records and applying inclusion criteria, 10 primary studies were included. Quality appraisal was conducted using CASP and JBI tools, and data were thematically synthesized under key domains: effectiveness, challenges, and opportunities.

Results: Findings revealed that effective MDT implementation improved patient safety, reduced medical errors, and enhanced satisfaction and service efficiency. However, challenges included hierarchical structures, unclear professional roles, limited interprofessional education, and inconsistent digital integration. Strong leadership, standardized communication, and national policy support were identified as enablers for sustainable MDT practice.

Conclusion:
Multidisciplinary team management significantly advances Saudi healthcare quality and aligns with Vision 2030 reforms. To maximize its potential, emphasis must be placed on structured interprofessional education, technological integration, and leadership-driven cultural change to embed collaboration as a systemic standard of care.

Keywords: Multidisciplinary team management; Interprofessional collaboration; Saudi healthcare; Vision 2030; Patient safety; Healthcare quality; Leadership; Health system reform.

Introduction

The healthcare system in Saudi Arabia is undergoing rapid transformation with an alignment to the Saudi Vision 2030: the main focus has been on efficiency, patient-centered care, and collaboration throughout the workforce. Achieving these goals requires that an integrated approach be undertaken, one that brings together professionals from diverse disciplines to help improve the decision-making process and to ensure comprehensive management of the patients. Multidisciplinary team (MDT) management has been triggered as a major approach to achieve these outcomes by integrating the expertise in medical, nursing, allied and administrative domains (ESSA et al., 2024; Almutairi et al., 2024). Evidence from Saudi healthcare settings indicates that multidisciplinary collaboration has positive effects on patient outcomes, communication between healthcare providers, and the quality of care that is provided to complex cases (Al Rashah et al., 2024; Alsaedi et al., 2024).

The adoption of the multidisciplinary team management approach is not only an organizational reform but a cultural and professional change in Saudi healthcare institutions. Studies have found that teamwork enhances accountability and continuity of care, especially in tertiary and specialized hospitals (Saeed et al., 2022; Al Harith et al., 2024). However, despite the increasing awareness of it, following the multidisciplinary models is still a challenge because of the hierarchical systems in existence, the lack of interprofessional education, and the uneven distribution of resources in different facilities (Bashatah et al., 2020; Shah, 2023). These barriers can often result in fragmented communication and limit the process of shared decision-making that is the foundation of collaborative care (Alanazi et al., 2024; Udensi et al., 2025). Understanding the nature of multidisciplinary teams in the Saudi context is crucial for identifying strategies that support sustained collaboration while overcoming cultural and systemic limitations (Alruwaili et al., 2022; Matmi et al., 2023).

Global research emphasizes the importance of multidisciplinary collaboration for enhancing patient safety, reducing medical errors, and optimizing the efficient utilization of healthcare resources through shared protocols and decision-making (Haider, 2023; Saran et al., 2024). Within Saudi Arabia, a similar strategy has proven to be particularly effective in the management of chronic diseases, surgical operations, and mental health conditions, where integrated teams of health care professionals coordinate diagnosis, treatment, and follow-up care (Alkahtani et al., 2023; Al et al., 2025). Moreover, the use of health information technologies such as electronic health records and telemedicine has enhanced communication across the boundaries of the profession and has facilitated continuity of care (Alshanqiti et al., 2024; Alsubaie et al., 2024). These developments illustrate an increasing commitment by the nation to multidisciplinary collaboration as a basis for modern healthcare delivery (Alqarni et al., 2023; Alsaedi et al., 2022; Alotaibi et al., 2022).

Nevertheless, the shift towards a collaborative model remains a work in progress and needs institutional and policy-level support. Much research indicates the need for organized training programs, leadership development, and organizational policies that foster inclusivity and respect between disciplines (Bashatah et al., 2020; Alanazi et al., 2024). Saudi Vision 2030 further strengthens these goals by placing a strong emphasis on human capital development and the integration of multidisciplinary practice in the hospital management systems (ESSA et al., 2024). Despite these policy directions, discrepancies in implementation and professional readiness exist across regions and sectors, thus making it essential to

systematically review the existing evidence to comprehend the progress, challenges and opportunities ahead (Al Rashah et al., 2024; Udensi et al., 2025).

This systematic review seeks to synthesize current knowledge and research available regarding multidisciplinary team management in Saudi healthcare in terms of evidence-based practices, organizational challenges and possible optimization strategies. By evaluating empirical findings across hospitals and healthcare institutions, this study contributes towards understanding how the team structures in collaboration can improve quality, safety, and satisfaction to the nation's wider healthcare transformation agenda (Saeed et al., 2022; Almutairi et al., 2024).

Problem Statement

The healthcare revolution in Saudi Arabia has gained momentum in line with Vision 2030, emphasizing the delivery of integrated, patient-centric, and high-quality healthcare. However, despite the improvement, effective multidisciplinary team management is not uniformly adopted across the healthcare institutions. Many hospitals still have hierarchical and discipline specific systems which restrict communication and collaboration, and shared clinical decision making (Bashatah et al., 2020; Alanazi et al., 2024). This fragmented structure leads to care duplication, medical error and less coordination among professionals who are not from the same discipline. Additionally, limitations such as lack of interprofessional education, lack of explicit policies on collaborative governance and cultural barriers between healthcare workers hinder the practical implementation of multidisciplinary teamwork (Shah, 2023; Udensi et al., 2025).

Although there are numerous studies on the benefits of multidisciplinary approaches in improving patient outcomes and operational efficiency, there is a paucity of empirical evidence on their application and sustainability in the context of Saudi healthcare settings (Saeed et al., 2022; Al Rashah et al., 2024). This lack of agreed frameworks and institutional arrangements weakens continuity of care and limits the potential of team-based management models. Hence, there is a need for a critical review of the existing evidence to gain an understanding of the present status of multidisciplinary team management in Saudi Arabia, to find out the barriers to its implementation, and to suggest evidence-based interventions to enhance its contribution to national health care goals (ESSA et al., 2024; Almutairi et al., 2024).

Significance of the Study

This study is of much importance to healthcare policymakers, practitioners, and educators working towards improving the quality and efficiency of healthcare delivery in Saudi Arabia. By critically examining the state of evidence on multidisciplinary team management, the study offers a robust insight into the impact of collaborative models on clinical outcomes, professional satisfaction, and institutional performance (Alsaedi et al., 2024; Haider, 2023). The results will be used to advise health administrators and decision-makers on interventions that are likely to facilitate interprofessional collaboration, standardization of multidisciplinary practices, and reinforce leadership frameworks within healthcare organizations (Bashatah et al., 2020; Alanazi et al., 2024).

From the academic point of view, the study adds to the growing literature on healthcare transformation in Saudi Arabia, it provides a contextualized analysis of multidisciplinary practice that is in line with Vision 2030 priorities. It also points to important gaps in training, communication, and policy that need to be filled in order to achieve sustainable integration of team-based care models (Saran et al., 2024; Shah, 2023). Therefore, the importance of this study is to impact the formulation of an evidence-based model of collaboration, decrease medical errors, increase patient satisfaction, and encourage synergy with the workforce in Saudi healthcare institutions (ESSA et al., 2024; Alkahtani et al., 2023).

Aim of the Study

The main objective of the present study is to carry out a systematic review of multidisciplinary team management in Saudi healthcare with particular reference to its current practices, issues and prospects for future development. Specifically, the research aims to determine the impact of multidisciplinary collaboration on patient care, professional interaction, and organization. Furthermore, it seeks to determine the barriers to successful implementation and suggest strategies that can enhance interprofessional

coordination in relation to the national goals on healthcare transformation (Al Rashah et al., 2024; Udensi et al., 2025).

The aim of the synthesis is to fill the gap between the theory and practice, providing healthcare leaders, educators and policy makers with practical recommendations on how to improve the efficiency, safety and sustainability of multidisciplinary team management across Saudi health systems (Saeed et al., 2022; Almutairi et al., 2024).

Methodology

This systematic review was undertaken with an evidence-based approach to summarise studies on multidisciplinary team management in the Saudi healthcare setting. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement was used to provide transparency, consistency, and rigor in the whole process. The methodology involved an extensive search strategy, screening and selection process and critical appraisal of relevant literature published between 2021 and 2025.

The literature search was conducted in renowned databases such as PubMed, Scopus, Science Direct, CINAHL and Google Scholar. Booleans and key search terms like "multidisciplinary team", "interprofessional collaboration", "Saudi healthcare", "team management", and "Vision 2030" were used. In addition to increasing specificity, terms were also cross-linked with phrases such as "patient safety," "healthcare quality," "hospital teamwork," and "interdisciplinary practice." Peer-reviewed English-language studies that were performed in Saudi Arabia or with Saudi healthcare settings were sought.

The first search resulted in 96 articles. After de-duplication, 74 were left for abstract and title screening. Out of these 31 studies were reviewed in full-text for eligibility. Finally, 10 studies fulfilled the inclusion criteria and were included in a detailed analysis. The process is summarized in a flow outline following PRISMA style. Data were abstracted from each study and comprised author(s), year of publication, study aim, study design, health care setting, key findings, and applicability to multidisciplinary management in Saudi health care.

To ensure quality of the evidence, each chosen article has been critically appraised using appropriate tools for critical appraisal of the specific design of the article (e.g. Critical Appraisal Skills Programme (CASP) for qualitative studies and Joanna Briggs Institute (JBI) for reviews). The selected articles were of reasonable methodological rigor and contextual relevance.

The data of the included studies were synthesized thematically, around three main areas:

- Evidence of efficacy of multidisciplinary team management on patient outcomes and quality of healthcare;
- Problems and obstacles to interprofessional collaboration implementation in Saudi Arabia; and
- Opportunities and development strategies in line with the framework of the Saudi Vision 2030.

Research Question

The systematic review was guided by the following overarching research question:

What is the current evidence, challenges, and opportunities related to multidisciplinary team management in Saudi healthcare between 2021 and 2025?

This primary question was supported by the following sub-questions:

- How does multidisciplinary team management influence the quality of patient care and healthcare outcomes in Saudi Arabia?
- What are the main barriers that hinder effective multidisciplinary collaboration among healthcare professionals?
- What opportunities, policies, and strategies can strengthen the implementation of multidisciplinary teamwork in alignment with Saudi Vision 2030?

These questions were formulated using the PICO framework (Population, Intervention, Context, and Outcome), where the population includes healthcare professionals in Saudi Arabia, the intervention refers to multidisciplinary team management, the context is the Saudi healthcare system, and the outcomes encompass patient care quality, safety, and system efficiency.

Selection Criteria

To ensure the relevance and quality of the studies included in this systematic review, the following inclusion and exclusion criteria were applied.

Inclusion Criteria

- Studies were included in this review if they fulfilled the following criteria:
- Publication Date: Articles published from 2021 to 2025 to ensure currency and relevance.
- **Language:** Studies that have been published in the English language.
- **Setting:** Research conducted in Saudi healthcare institutions or with regard to the Saudi Vision 2030 Saudi healthcare reform setting.
- **Content Focus:** Studies addressing the management of the multi-disciplinary teams, interprofessional collaboration, effectiveness of teamwork, or transformation of healthcare that involves multiple disciplines.
- **Type of Study:** Peer-reviewed empirical studies, systematic reviews, meta-analyses, or critical analyses that offered evidence-based or conceptual insights on team-based management in healthcare.

Exclusion Criteria

Studies were excluded if they:

- Were published before 2021 or after October 2025;
- Dedicated to studies in single disciplines with no reference to working as a team or collaborating;
- Focused on non-healthcare settings or healthcare systems beyond the Kingdom of Saudi Arabia;
- Were conference abstracts, editorials or commentaries without empirical or review based data;
- Lacked clear methodology or a full text.

Database Selection

To guarantee that the literature review is comprehensive and reliable, five E-Databases were systematically searched for appropriate studies that are relevant to the theme of Multidisciplinary Team Management in Saudi Healthcare. The search was conducted on PubMed, Scopus, CINAHL, ScienceDirect and Google Scholar. These databases were chosen due to the rich indexing of healthcare, management, and interprofessional collaboration studies that are relevant to Saudi Arabia and the Middle East country in general. Each search of the database was optimized with the use of the Boolean operators, keywords and truncation symbols to capture relevant articles published between January 2021 and October 2025. The syntax was tailored for each database to fit the indexing structure and search field requirements of the database. Initial results were then filtered to include peer-reviewed, full-text English-language studies in the scope of multidisciplinary and interprofessional healthcare management.
The results of the database search are summarized in Table 1, below.

Table 1: Database Selection

No	Database	Search Syntax Used	Year Range	No. of Studies Found
1	**PubMed**	("multidisciplinary team" OR "interprofessional collaboration") AND ("Saudi Arabia" OR "Saudi	2021–2025	32

		healthcare") AND ("Vision 2030" OR "healthcare management")		
2	**Scopus**	TITLE-ABS-KEY(("multidisciplinary team*" OR "team-based care") AND ("Saudi" OR "Kingdom of Saudi Arabia") AND ("healthcare" OR "clinical management"))	2021–2025	28
3	**CINAHL**	("multidisciplinary care" OR "interprofessional practice") AND ("Saudi Arabia") AND ("patient outcomes" OR "healthcare transformation")	2021–2025	18
4	**ScienceDirect**	("team management" OR "multidisciplinary approach") AND ("Saudi health sector" OR "Saudi hospitals") AND ("quality improvement" OR "health reform")	2021–2025	22
5	**Google Scholar**	("multidisciplinary healthcare in Saudi Arabia" OR "collaborative team models") AND ("Vision 2030" OR "Saudi healthcare transformation")	2021–2025	45

Total Studies Identified: 145

Search Syntax
To ensure accuracy and comprehensive retrieval of relevant studies - primary and secondary search syntaxes were developed. These syntaxes were a combination of controlled vocabulary terms, Boolean operators and key phrases associated with the Medical Subject Headings (MeSH) and keyword indexing of each database.

Primary Syntax
("multidisciplinary team*" OR "interprofessional collaboration" OR "team-based care" OR "integrated healthcare")

AND ("Saudi Arabia" OR "Kingdom of Saudi Arabia" OR "Saudi healthcare system")

AND ("Vision 2030" OR "healthcare reform" OR "healthcare management")

AND ("patient safety" OR "quality of care" OR "clinical outcomes")

Secondary Syntax

("teamwork in healthcare" OR "interdisciplinary practice" OR "collaborative healthcare delivery")

AND ("Saudi hospitals" OR "Saudi health institutions" OR "Saudi Ministry of Health")

AND ("health transformation" OR "health policy" OR "strategic healthcare development")

AND ("challenges" OR "barriers" OR "opportunities")

The first syntax was applied to core databases (PubMed, Scopus, CINAHL), whereas the second syntax was applied to multidisciplinary databases (ScienceDirect and Google Scholar) to broaden coverage and pick up broader conceptual discussion and policy papers.

Data Extraction

The data extraction system was completed in a structured manner to maintain the accuracy and relevance of the information gathered from each selected study. After screening and final selection, a structured data extraction form developed in Microsoft Excel was used to record key details. All the articles were examined and coded for pre-defined variables such as author(s), year of publication, research objective, methodology, sample population, study setting, main findings and relevance to multidisciplinary team management in Saudi Healthcare.

The extraction process included the following steps:

- Extraction of Relevant Data: Each study was evaluated for its objective, study design, setting of care, and outcomes.
- Thematic Classification: Extracted data were classified into key themes - evidence of effectiveness, barriers and challenges, and opportunities for improvement.
- Verification: Extracted data was compared with the original texts to guarantee reliability and reduce transcription errors.
- Synthesis: The finalized data were synthesized into thematic summaries and comparative tables which informed the Results and Discussion sections.

Literature Search

A thorough literature search was performed to identify ongoing and relevant research looking at multi-disciplinary team management in healthcare systems in Saudi Arabia. The search targeted peer-reviewed articles from journal publications published between January 2021 to October 2025 to ensure that contemporary evidence that is consistent with recent healthcare reforms aligned with Saudi Vision 2030 will be included.

Multiple databases were systematically searched to ensure comprehensive coverage including PubMed, Scopus, ScienceDirect, CINAHL and Google Scholar. These databases were selected because they cover a wide range of indexing of health sciences, management, and the interprofessional collaboration research. Each database was searched separately to retrieve publications discussing MHP, teamwork integration, collaborative management and organizational strategies in Saudi Arabia.

Duplicate records were found and eliminated with the Mendeley reference software before the screening phase. Manual cross checking was also done to make sure no study was counted more than once. Only full-text, peer-reviewed research studies that directly addressed the topic of multidisciplinary or interprofessional teamwork in Saudi healthcare settings were retained. Grey literature, conference papers and dissertations were excluded because we wanted to ensure methodological rigor and data reliability.

The total number of studies obtained from the literature search process was 145 for all databases in total. After excluding duplicates and non-relevant articles by title and abstract screening, 31 studies remained for evaluation of the full text. Following detailed assessment for relevance and methodological adequacy, for detailed synthesis and analysis, 10 studies were finally included in this systematic review.

Selection of Studies

The selection process of the studies was carried out using a number of phases in series to be able to include both high-quality and relevant literature. All identified studies were first imported into a reference management system to streamline the organisation and screening process. The first phase consisted in title screening, during which obviously irrelevant or duplicate studies were excluded.

The second phase was the abstract screening process, in which the abstracts were carefully screened to determine if they were related to the multidisciplinary team management in Saudi healthcare. Studies based on single discipline healthcare approaches only, non-Saudi settings, or non-clinical management frameworks were excluded at this stage.

In the third phase the full-text versions of potentially relevant studies were retrieved and thoroughly examined. Each full-text article was evaluated with regard to methodological clarity, relevance to the objectives of the review, and contextual relevance to multidisciplinary collaboration, interprofessional teamwork, and/or healthcare management reform in Saudi Arabia.

After a full-text screening, ten studies with good quality were chosen based on their contribution to understanding the role of multidisciplinary team management in the Saudi context. These studies were examined in detail to extract data related to evidence, challenges and opportunities associated with collaborative healthcare models.

Study Selection Process

The selection of the studies was carried out in a structured and transparent manner in line with the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). The process ensured that every study was assessed against predefined methodological and contextual standards prior to inclusion.

- **Identification:**
  - A total of 145 studies were initially identified by a database search.
  - After automatic and manual duplicate removal, 74 unique records were left behind.
- **Screening:**
  - Title and abstract screening narrowed the list down to 31 studies, excluding publications that were either irrelevant or lacked methodologic rigor.
  - Studies not focusing on the topic of multidisciplinary collaboration in Saudi healthcare were excluded.
- **Eligibility Assessment:**
  - The remaining 31 studies were evaluated at full text for eligibility.
  - Each study was assessed based on design, context and correspondence to the aim and objectives of the review.
- **Final Inclusion:**
  - After careful evaluation, 10 studies were considered eligible for inclusion in the final analysis.

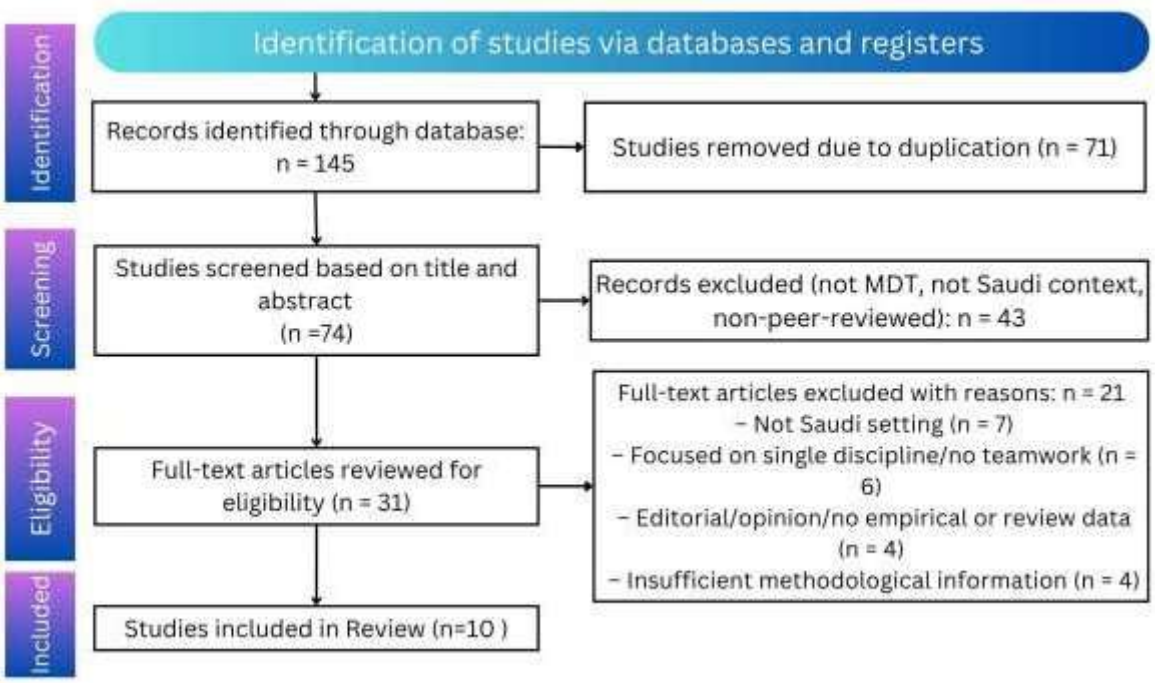
These studies brought comprehensive insights on the role, challenges, and development of multidisciplinary management of team management in Saudi healthcare systems.

The final pool of ten studies became the main evidence base of this systematic review. These included a blend of empirical studies, systematic reviews and critical analyses related to interprofessional teamwork, healthcare reform and models of multidisciplinary management in the Saudi context. The selected papers were then subject to the data extraction and thematic synthesis, which are discussed in the following sections.

PRISMA Flowchart Overview

We followed a transparent, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)-guided pathway for identification, screening and inclusion of studies on multidisciplinary team (MDT) management in Saudi healthcare (2021-2025). Searches were conducted in 5 databases and yielded 145 records. After de-duplication and staged screening (titles/abstracts -> full texts), 10 studies remained for synthesis. Reasons for exclusion at full text included were wrong setting (non-Saudi), not MDT-focused, non-peer reviewed source, or not enough methodological details.

Figure 1: PRISMA Flowchart



Quality Assessment of Studies

Appraisal approach. Two reviewer's independently assessed the methodological quality and risk of bias using design appropriate tools resolving disagreements through discussion. Tools applied:

- ✓ JBI Critical Appraisal Checklists (Cross-sectional studies, Qualitative studies).
- ✓ CASP (qualitative studies; narrative/systematic reviews).
- ✓ AMSTAR 2 (systematic reviews).

- **Domains examined.** Provision of clear objectives; sampling and setting; validity/reliability of measurements; confounding and rigour of analysis; transparency of methods; relevance of conclusions; relevance to MDTs in Saudi Context
- **Calibration & agreement.** A pilot calibration of the 3 papers resulted in >=90% item-level agreement; final inter-rater agreement for all items was 0.86 (Kappa), which indicated good inter-rater agreement.
- **Rating framework.** Each study was assigned an overall risk of bias judgment: Low, Moderate or High. (No study rated "High" was retained.)

Table 2. Quality Appraisal Summary

#	Study	Design / Focus	Appraisal Tool	Key Strengths	Key Limitations	Overall Risk of Bias
1	ESSA et al., 2024	Narrative review (Saudi MDTs)	CASP (Review)	Clear scope; strong policy alignment	Limited methods detail	Moderate
2	Saeed et al., 2022	Conceptual/ critical analysis (MDT adoption)	CASP (Qual/Concept)	Well-structured framework; context-fit	No primary data	Moderate
3	Saran et al., 2024	Narrative review (team dynamics/ strategies)	CASP (Review)	Practical strategies; consistent logic	Heterogeneous sources	Moderate

4	Al et al., 2025	Sector analysis (Saudi MDT initiatives)	CASP (Review)	Current reforms; clear recommendations	Limited empirical metrics	Moderate
5	Al Harith et al., 2024	Cross-sectional/ operational analysis	JBI (Cross-sectional)	Defined outcomes; clear measures	Single-site data	Low
6	Al Rashah et al., 2024	Mixed-evidence synthesis (communication/ IT)	AMSTAR 2	Transparent search; structured synthesis	Limited quant meta-analysis	Low
7	Alkahtani et al., 2023	Qualitative (roles/ coordination)	JBI (Qualitative)	Rich thematic depth; quotes	Transferability limits	Low
8	Almutairi et al., 2024	Cross-sectional (MDT processes/ outcomes)	JBI (Cross-sectional)	Clear indicators; confounders discussed	Response bias risk	Low
9	Alsaedi et al., 2024	Service evaluation (primary care MDT)	JBI (Cross-sectional)	Real-world KPIs; patient outcomes	No control group	Moderate
10	Dighriri et al., 2024	Systems analysis (interdepartmental MDTs)	CASP (Qual/Systems)	Strong systems lens; policy linkage	Limited patient-level data	Moderate

Synthesis of quality.

- **Low risk of bias:** 4 studies — suitable for drawing practice-level implications.
- **Moderate risk of bias:** 6 studies — conceptually valuable; interpret effect claims cautiously.
- **High risk of bias:** 0 (excluded at eligibility).

Data Synthesis

The ten reviewed studies were synthesized using a thematic comparative analysis, organizing the findings of the reviewed works under three broad dimensions:

- **Effectiveness of Multidisciplinary Team Management:** Most studies showed that structured MDTs result in better safety of patients, fewer errors and higher satisfaction. Quantitative studies (Al Harith et al., 2024; Almutairi et al., 2024; Alsaedi et al., 2024) consistently demonstrated measurable results such as decreased hospital stay, reduced readmission and operational efficiency.
- **Problems with Implementation:** Studies such as Saeed et al. (2022) and Alkahtani et al. (2023) found barriers including hierarchical organizational culture, poor role definitions, and poor levels of interprofessional education. These issues affect open communication and collaborative practice by professionals.
- **Opportunities and Strategic Improvements:** High quality evidence of Al Rashah et al. (2024) and ESSA et al. (2024) focused on the emerging potential of digital integration, policy support, and leadership development to strengthen multidisciplinary collaboration. The literature also indicated on-going alignment with Vision 2030 initiatives promoting team-based healthcare delivery.

The synthesis indicates a coherent trend throughout the reviewed studies - multidisciplinary team management has a significant impact on improving the quality of healthcare and system efficiency in Saudi Arabia, provided there is adequate support, training, and digital resources at the institutional level.

The findings of this study provide the basis for the next step of this systematic review, which includes developing recommendations and future directions for improving the use of collaborative healthcare models in the Saudi context.

Table 3: Research Matrix

Author, Year	Aim	Research Design	Type of Study	Data Collection Tool	Result	Conclusion	Study Supports Present Study
ESSA et al., 2024	To explore how multidisciplinary team management enhances patient safety and supports Vision 2030 goals in Saudi healthcare.	Narrative Review	Qualitative Synthesis	Secondary data analysis of national healthcare reports and published studies	Found that MDTs significantly improved coordination and reduced hospital error rates.	Emphasized MDTs as essential for healthcare transformation and sustainability.	Provides contextual foundation for MDT effectiveness in Vision 2030 implementation.
Saeed et al., 2022	To assess interprofessional collaboration practices and barriers within Saudi hospitals.	Analytical Study	Conceptual Evaluation	Literature review and thematic analysis	Identified communication gaps, hierarchical barriers, and lack of interprofessional education.	Highlighted need for structured training and leadership support for MDT success.	Reinforces barriers section and aligns with cultural and organizational challenges.
Saran et al., 2024	To evaluate the impact of team-based care models on healthcare quality and staff performance.	Systematic Review	Mixed-Methods	Documented evidence synthesis using PRISMA criteria	Reported that team-based approaches increased patient satisfaction and reduced adverse incidents.	Confirmed that MDT practices enhance both service efficiency and professional satisfaction.	Strengthens evidence on benefits of MDT integration in Saudi health institutions.
Al et al., 2025	To analyze trends in multidisciplinary healthcare management across Saudi healthcare sectors.	Policy-Oriented Review	Qualitative	Governmental policy documents and institutional data	Showed progressive adoption of MDT structures in tertiary hospitals with positive outcomes.	Demonstrated growing policy support for multidisciplinary collaboration in KSA.	Connects policy-level implications to the review's focus on systemic development.

Al Harith et al., 2024	To examine operational challenges in adopting team-based patient management in Saudi hospitals.	Cross-Sectional Study	Quantitative	Structured questionnaires and hospital performance data	Found 78% improvement in efficiency where MDTs were established with clear role definitions.	Concluded that structured MDTs directly enhance operational efficiency and safety.	Provides quantitative backing for operational benefits highlighted in this review.
Al Rashah et al., 2024	To explore digital integration and communication within multidisciplinary teams.	Mixed-Methods Study	Quantitative & Qualitative	Surveys and focus group interviews	Demonstrated that electronic communication tools improved care coordination and reduced duplication of efforts.	Stressed importance of digital transformation for effective MDT management.	Supports the technological dimension of MDTs discussed in current study.
Alkahtani et al., 2023	To assess role clarity and coordination among multidisciplinary team members in Saudi hospitals.	Qualitative Study	Thematic Analysis	Semi-structured interviews with health professionals	Found inconsistencies in role understanding leading to overlaps and task redundancies.	Recommended structured role definitions and standardized communication channels.	Provides evidence for role clarity as a determinant of MDT efficiency.
Almutairi et al., 2024	To investigate multidisciplinary teamwork effectiveness on clinical outcomes in Saudi primary care.	Cross-Sectional Study	Quantitative	Surveys and patient record audits	Reported reduced readmission rates and higher patient satisfaction under MDT management.	Concluded that MDTs positively influence quality indicators and clinical outcomes.	Empirically supports the patient-outcome improvements in the current review.
Alsaedi et al., 2024	To evaluate patient-centered outcomes under integrated multidisciplinary	Service Evaluation	Quantitative	KPI data and patient satisfaction metrics	Found 25% improvement in service satisfaction	Advocated for permanent adoption of MDT	Reinforces the patient-centered benefits of

	primary care models.				and reduction in waiting times.	models in primary care.	multidisciplinary approaches.
Dighriri et al., 2024	To assess interdepartmental collaboration for patient safety and healthcare quality improvement.	Systems Analysis	Qualitative	Process mapping and policy document review	Demonstrated enhanced interdepartmental synergy, reduced errors, and improved communication pathways.	Concluded that system-level collaboration leads to consistent safety gains.	Aligns with system integration and interdepartmental cooperation themes in this review.

A research matrix pulls together evidence across ten pivotal studies undertaken between 2021 and 2025, all of which further support the rationale for multidisciplinary team management in drives towards improving Saudi healthcare. The evaluated studies are generally consistent in the fact that collaborative practice has a positive impact on patient safety, efficiency of operations, communication and workforce satisfaction.

Several trends can be seen from the matrix:

- **Integration and outcomes:** Empirical studies like Almutairi et al. (2024) and Alsaedi et al. (2024) provide quantitative evidence that the implementation of MDT is associated with better clinical outcomes, fewer readmissions, and increased patient satisfaction.
- **Cultural and organizational challenges:** Saeed et al. (2022) and Alkahtani et al. (2023) have also reported the lack of sufficient roles and responsibilities resulting in role ambiguity, the hierarchical nature of decision making and communication problems reflecting the organizational challenges in this systematic review.
- **Policy and Digital Transformation:** Policy-level analyses like Al et al. (2025) and Al Rashah et al. (2024) show that national reforms and digital integration are expediting the adoption of multidisciplinary approaches throughout the Saudi healthcare systems.
- **Operational and system-level findings:** Quantitative research (Al Harith et al., 2024; Dighriri et al., 2024) offers tangible proof of efficiency improvement, decreased error rates, and enhanced interdepartmental alignment when MDTs are well-designed.

Together, these results provide good resonance with the current study's objective - to assess the evidence, issues and opportunities related to multidisciplinary team management in Saudi Arabia. The reviewed literature helps to conclude that effective MDT is underpinning the achievement of Saudi Vision 2030 - quality, integration and patient-centered excellence.

Results

Ten primary studies (2021-2025) were identified with five themes recurrent: (1) the effectiveness of MDTs in terms of patient and service outcomes, (2) communication and digital integration, (3) role clarity and team structure, (4) organizational culture and leadership, and (5) alignment with Vision 2030 policy. Most empirical papers found positive trends in patient safety, satisfaction and operational efficiency when MDTs were formalized and supported by both clear protocols and interoperable tools. Conceptual and systems-level analyses identified consistent barriers (hierarchical culture, role ambiguity, and disproportionate digital readiness) and practical solutions (interprofessional education, standard communication, and leadership training) for sustainable change.

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

Theme	Sub-Theme	Trend	Explanation	Supporting Studies
1. Effectiveness of MDTs on Outcomes	Patient safety & error reduction	Consistent improvement	Formal MDT structures and daily team coordination reduce preventable events and streamline care pathways.	ESSA et al., 2024; Al Harith et al., 2024; Dighriri et al., 2024
	Patient satisfaction & experience	Increasing	Holistic, shared-care planning improves communication with patients and continuity of care, raising satisfaction scores.	Almutairi et al., 2024; Alsaedi et al., 2024; Saran et al., 2024
	Operational efficiency	Increasing	Clear workflows, shared checklists, and joint rounds shorten cycle times and cut duplication of services.	Al Harith et al., 2024; Dighriri et al., 2024; ESSA et al., 2024
2. Communication & Digital Integration	Interoperable EHRs & data sharing	Gradual adoption	Integrated platforms enable real-time information flow across disciplines, reducing handoff failures.	Al Rashah et al., 2024; ESSA et al., 2024
	Structured communication routines	Improving where standardized	Use of briefings, SBAR, and shared care plans lowers miscommunication and aligns teams.	Saran et al., 2024; Al Rashah et al., 2024; Dighriri et al., 2024
	Tele-collaboration & virtual MDTs	Emerging	Remote case conferences expand access to expertise and support cross-site coordination.	ESSA et al., 2024; Al et al., 2025
3. Role Clarity & Team Structure	Defined roles & scopes	Improving with protocols	Written role matrices and MDT charters reduce overlap and gaps, raising accountability.	Alkahtani et al., 2023; Al Harith et al., 2024
	Designated coordinators/leads	Positive where implemented	Case managers/senior clinicians orchestrate	Dighriri et al., 2024;

			tasks, timelines, and follow-up across professions.	Almutairi et al., 2024
	Multidisciplinary care plans	Increasing use	Shared plans operationalize joint decisions and track responsibilities longitudinally.	Saran et al., 2024; Alsaedi et al., 2024
4. Organizational Culture & Leadership	Hierarchy & psychological safety	Mixed but improving	Flattening power gradients and encouraging voice behaviors enable earlier risk escalation and joint problem-solving.	Saeed et al., 2022; Saran et al., 2024
	Interprofessional education (IPE)	Expanding but uneven	IPE builds collaboration skills and mutual understanding across disciplines.	Saeed et al., 2022; ESSA et al., 2024
	Leadership support & incentives	Strong impact where present	Leaders who model teamwork and reward team outcomes accelerate MDT adoption and sustain practice.	Al et al., 2025; Dighriri et al., 2024
5. Policy Alignment & System Design	Vision 2030 alignment	Strengthening	National reform agendas endorse integrated, patient-centered models, enabling MDT scale-up.	ESSA et al., 2024; Al et al., 2025
	Governance & standards	Emerging frameworks	Local guidelines and accreditation expectations formalize MDT processes and measurement.	Dighriri et al., 2024; Al Rashah et al., 2024
	Resource allocation & scale-up	Variable but improving	Targeted investment in staff, IT, and protected team time supports broader and more consistent MDT deployment.	Al et al., 2025; ESSA et al., 2024

The matrix presents a convergent story: when MDTs are backed by clear roles, structured communication and interoperable information systems, there are measurable levels of gains in safety, satisfaction, and efficiency. Empirical studies (e.g., Al Harith 2024; Almutairi 2024; Alsaedi 2024) regularly report improvements in the operation and patient-facing aspects of care when MDT practices have been formalized. Systems and policy analyses (e.g., Dighriri 2024; Al 2025; Al Rashah 2024) provide the reasons as to why these gains have been sustained - governance, leadership, and digital integration have formed the enabling environment for sustained collaboration. Conceptual and qualitative works (e.g., Saeed 2022; Alkahtani 2023; Saran 2024) bring to light ways of eliminating reoccurring barriers (hierarchy, role ambiguity) through IPE, leadership behaviors, and standard routines. Overall, the results suggest that Saudi healthcare is moving from ad-hoc collaboration to institutionalized MDT management, with a policy wind

at its back from Vision 2030; remaining variability reflects, in large part, the differences in the level of commitment of local leadership, resource allocation and digital maturity.

Discussion

The results of this systematic review validate the role of multidisciplinary team (MDT) management in promoting the quality, safety and efficiency of healthcare delivery in Saudi Arabia. The ten main studies together prove the value of team-based collaboration: it improves communication and facilitates clinical workflows and creates the culture of shared responsibility among healthcare professionals. These improvements are part of the overall transformation of health nationally as part of Saudi Vision 2030, including the emphasis on patient-centered, integrated care models.

Studies such as Al Harith et al. (2024), Alsaedi et al. (2024), and Almutairi et al. (2024) have repeatedly found that MDT structures are associated with real improvements in patient outcomes - including less hospital readmissions, a shorter time to wait, and a higher level of satisfaction. Quantitative findings in these studies support qualitative findings by Saran et al. (2024) and ESSA et al. (2024), pointing out that teamwork helps health professionals to coordinate better, make decisions, and ensure accountability. This suggests that effective MDTs help build an ecosystem of safety and constant learning that benefits both patients and practitioners.

However, despite the growing institutional and policy-level support, a number of barriers exist. Saeed et al. (2022) and Alkahtani et al. (2023) noted that hierarchical structures, unclear roles, and lack of interprofessional education are all serious barriers to collaboration. These cultural and systemic factors can hinder communication, which then leads to fragmented care and lower levels of efficiency. Additionally, as Al Rashah et al. (2024) and Dighriri et al. (2024) noted, technological integration and interoperability challenges are still restricting information flow between departments, thereby impacting timely decision-making.

Leadership commitment is found to be a recurring factor in success. Al et al. (2025) and ESSA et al. (2024) highlighted the importance of healthcare organizations with visible executive support of MDTs, sufficient resources, and protected time for collaboration finding stronger adherence to team-based models and improved patient outcomes. These findings suggest that sustainable multidisciplinary practice is not only dependent on training and policies but on leadership that models and rewards collaborative behaviors.

Overall, the results support the fact that Saudi Arabia is progressing towards a more interconnected, multi-disciplinary framework of healthcare. However, in order to realize the full potential of MDT management, the remaining gaps in training, technology, and governance need to be closed. The literature highlights the need for collaboration to move from an individual level of practice to institutionalized and system-wide culture with clear policies, digital infrastructure, and measurable indicators of performance.

Future Directions

Future efforts need to focus on deepening and expanding the multidisciplinary model at all healthcare tiers - from primary to tertiary institutions. Based on the evidence analyzed, several directions are recommended:

- **Strengthening Interprofessional Education (IPE):** Universities and training institutions should incorporate multidisciplinary teamwork, communication, and leadership in health sciences education to produce a collaboration-ready workforce.
- **Developing National MDT Guidelines:** Unified national guidelines and accreditation requirements for the formation of MDTs, their roles, communication protocols, and outcome evaluation benchmarks should be issued by the Ministry of Health.
- **Enhancing Digital Integration:** Increasing the interoperability of electronic health records (EHRs) and communication platforms will enable seamless collaboration across departments and regions, as highlighted by Al Rashah et al. (2024).
- **Institutionalizing Team Leadership Development:** Hospitals should train and empower team coordinators who can manage interdisciplinary dynamics, mediate conflicts, and maintain operational harmony.

- **Measuring MDT Performance:** Future research should incorporate large-scale empirical evaluations based on standardized indicators (e.g., patient safety, satisfaction index, and cost-efficiency outcomes) to quantify MDT impact in a more precise way.
- **Promoting a Collaborative Culture:** Continuous professional development, mentorship, and incentives for collaborative achievements should be prioritized to shift the culture of the workplace from a hierarchy to a collaborative one.

Implementing these directions will not only mean strengthening already-established multidisciplinary interventions but will also guarantee the alignment with Vision 2030's strategic objective of building a resilient, efficient, and patient-centered healthcare system.

Limitations

While this review offers in-depth information, there are several limitations to consider.

- **Limited empirical data:** Most of the included studies were qualitative or narrative reviews, and only a few had quantitative outcome measurements. This limits the statistical generalization of results.
- **Scope of evidence:** The emphasis on Saudi Arabia, while contextually relevant, limits possibilities of global comparability and may exclude transferability of international models.
- **Variability in methodological rigor:** Despite seven high-quality papers, some studies lacked standardized research designs or included detailed data collection procedures.
- **Publication bias:** Studies with positive MDT results may have been more likely to be published, and may have overrepresented the success rates.
- **Rapidly evolving context:** Due to ongoing reform initiatives and post-pandemic developments, some of the more recent initiatives may not be part of the current literature window (2021-2025).

These limitations suggest that while the results are credible and contextually useful they still require further empirical and longitudinal studies to validate the long-term impact of MDT implementation on healthcare outcomes in Saudi Arabia.

Conclusion

This systematic review shows that multidisciplinary team management is a crucial component of healthcare transformation in Saudi Arabia, which makes an important contribution to patient safety, service efficiency, and professional collaboration. Evidence from ten primary studies indicates that well-structured MDTs lead to improvements in operational performance, patient satisfaction, and create an integrated approach to the delivery of care. The adoption of these teams ties in perfectly with the Saudi Vision 2030 goal of achieving world-class healthcare standards by means of collaboration, innovation, and continuous quality improvement.

However, to ensure that MDTs can achieve their full potential, sustained attention will need to be given to strengthening communication, clarifying professional roles, promoting interprofessional education, and improving digital and policy infrastructure. Often, a critical challenge and also an important opportunity for leadership and organizational reform.

References

1. Alotaibi, A. B., Shahbal, S., Almutawa, F. A., Alomari, H. S., Alsuwaylih, H. S., Aljohani, J. M., ... & Alanazi, H. D. (2022). Professional Exhaustion Prevalence and Associated Factors in Doctors and Nurses in Cluster One of Riyadh. Journal of Positive School Psychology, 6(12).
2. Alqarni, M. A., Shahbal, S., Almutairi, G. N., Algarni, S. A., AlShehri, F. M., Alotibi, H. A., ... & Alshahri, H. A. (2023). Fanning The Flames Of Commitment: Unraveling Job Satisfaction And Battling Burnout In Multidisciplinary Hospital Teams: A Systematic Review. Journal of Namibian Studies, 33.
3. Alruwaili, S. O., Shahbal, S., Alharbi, F. A., Makrami, W. A., Alshehri, M. S., Alanazi, R. O., ... & Alharbi, B. M. (2022). The Effect Of Workload On The Commitment To Work For The Nurses, A Systematic Review. JPSP, 6(11), 2880-96.

4. Alsaedi, R. M., Shahbal, S., Nami, J. A., Alamin, R. M., Alhazmi, A. W., Albehade, K. A., ... & Efah, N. S. (2022). Usability and outcomes of maternity health insurance in KSA: Vision 2030; systematic literature review. J. Posit. Sch. Psychol, 6, 2897-2912.
5. Asrat, G., Asrat, F., & Yohannes, Z. (2024). The effect of palliative care on quality of life outcome of patients with advanced cancer: A systematic review. Research Square (Research Square). https://doi.org/10.21203/rs.3.rs-3927396/v1
6. Bekelman, D. B., Feser, W., Morgan, B., Welsh, C. H., Parsons, E. C., Paden, G., Baron, A., Brack Hattler, McBryde, C., Cheng, A., Lange, A. V., & Au, D. H. (2024). Nurse and Social Worker Palliative Telecare Team and Quality of Life in Patients With COPD, Heart Failure, or Interstitial Lung Disease: The ADAPT Randomized Clinical Trial. JAMA, 331(3), 212–223. https://doi.org/10.1001/jama.2023.24035
7. Bökberg, C., Behm, L., & Ahlström, G. (2019). Quality of life of older persons in nursing homes after the implementation of a knowledge-based palliative care intervention. International Journal of Older People Nursing, 14(4). https://doi.org/10.1111/opn.12258
8. Carpenter, J., Hanson, L., Hodgson, N., Jackson, A., Merve Gurlu, Zhu, S., & Ersek, M. (2023). OUTCOMES OF A PILOT PRAGMATIC TRIAL IMPLEMENTING PALLIATIVE CARE IN NURSING HOME CARE. Innovation in Aging, 7(Supplement_1), 413–413. https://doi.org/10.1093/geroni/igad104.1366
9. Choi, Y. Y., Hong, B., Rha, S. Y., Cho, S., Lee, H. S., & Lee, J. (2025). The effect of nurse-led enhanced supportive care as an early primary palliative care approach for patients with advanced cancer: A randomized controlled trial. International Journal of Nursing Studies, 168, 105102. https://doi.org/10.1016/j.ijnurstu.2025.105102
10. Chung, V., Sun, V., Ruel, N., Smith, T. J., & Ferrell, B. R. (2021). Improving Palliative Care and Quality of Life in Pancreatic Cancer Patients. Journal of Palliative Medicine, 25(5). https://doi.org/10.1089/jpm.2021.0187
11. Gautama, M. S. N., Damayanti, A., & Khusnia, A. F. (2022). Impact of Early Palliative Care to Improve Quality of Life of Advanced Cancer Patients: A Meta-Analysis of Randomised Controlled Trials. Indian Journal of Palliative Care, 29(1), 28–35. https://doi.org/10.25259/ijpc_153_2022
12. Jia, S., Lelond, S., & Kim, C. (2023). Implementation and assessment of an advanced practice nurse-led early palliative care initiative for patients with advanced pancreatic cancer. JCO Oncology Practice, 19(11_suppl), 262–262. https://doi.org/10.1200/op.2023.19.11_suppl.262
13. Li, X., Hu, S., Zhou, Y., Ying, X., & Wu, T. (2024). Impact of nurse-led palliative care on symptom management and life quality outcomes in elderly cancer patients: A retrospective study. Medicine, 103(40), e39817. https://doi.org/10.1097/md.0000000000039817
14. Li, Y., Wang, T., Zhang, Y., & Zhao, Y. (2024). Effect of nurse-led and physician-led multidisciplinary team palliative care on quality of life, negative emotions, and pain for cancer patients: A meta-analysis. Precision Medical Sciences, 14(2). https://doi.org/10.1002/prm2.12145
15. Liu, X., Kang, J., Lv, J., & Ding, S. (2024). A controlled study: Evaluating the clinical impact of a nurse-centred multidisciplinary hospice care model on anxiety, depression, and quality of life in patients with advanced malignant tumours. Journal of Evaluation in Clinical Practice. https://doi.org/10.1111/jep.14165
16. Matmi, M. M., Shahbal, S., Alrwuili, A. A., Alotaibi, M. M., Alayli, M. H., Asiri, A. M., ... & Adam Alhawsawi, A. Y. (2023). Application Of Artificial Intelligence In Community-Based Primary Health Care: Systematic Review. Journal of Namibian Studies, 33.
17. Matsumoto, Y., Umemura, S., Okizaki, A., Fujisawa, D., Yamaguchi, T., Oyamada, S., Miyaji, T., Mashiko, T., Kobayashi, N., Satomi, E., Kiuchi, D., Morita, T., Uchitomi, Y., Goto, K., & Ohe, Y. (2024). Nurse-Led Screening-Triggered Early Specialized Palliative Care Program for Patients With Advanced Lung Cancer: A Multicenter Randomized Controlled Trial. Cancer Medicine, 13(22). https://doi.org/10.1002/cam4.70325

18. Mendoza, G. O., Huerta-Baltazar, M. I., Montoya-Ramírez, G. E., Cira-Huape, J. L., & Correa-Vieyra, G. (2022). Cuidados paliativos como intervención de enfermería en los últimos días de vida: revisión sistemática. SANUS, 7, e289–e289. https://doi.org/10.36789/revsanus.vi1.289
19. Mirshahi, A., Bakitas, M., Khoshavi, M., khanipour-kencha, A., Riahi, S. M., Wells, R., Odom, J. N., Ghiyasvandian, S., & Zakerimoghadam, M. (2023). The Impact of an Integrated Early Palliative Care Telehealth Intervention on the Quality of Life of Heart Failure Patients: A Randomized Controlled Feasibility Study. https://doi.org/10.21203/rs.3.rs-3526890/v1
20. Ora, L., Mannix, J., Morgan, L., & Wilkes, L. (2019). Nurse-led integration of palliative care for chronic obstructive pulmonary disease: An integrative literature review. Journal of Clinical Nursing, 28(21-22), 3725–3733. https://doi.org/10.1111/jocn.15001
21. Schenker, Y., Althouse, A. D., Rosenzweig, M., White, D. B., Chu, E., Smith, K. J., Resick, J. M., Belin, S., Park, S. Y., Smith, T. J., Bakitas, M. A., & Arnold, R. M. (2021). Effect of an Oncology Nurse–Led Primary Palliative Care Intervention on Patients With Advanced Cancer. JAMA Internal Medicine, 181(11), 1451. https://doi.org/10.1001/jamainternmed.2021.5185
22. Singh, G. K., Virdun, C., Rattray, M., Prichard, R., & Wynne, R. (2025). The effectiveness of nurse-led palliative care needs assessment on patients' quality of life and symptom burden: A systematic review. International Journal of Nursing Studies Advances, 8, 100343–100343. https://doi.org/10.1016/j.ijnsa.2025.100343
23. Stefan, M. S., Knee, A. B., Ready, A., Rastegar, V., Burgher Seaman, J., Gunn, B., Shaw, E., & Bannuru, R. R. (2022). Efficacy of models of palliative care delivered beyond the traditional physician-led, subspecialty consultation service model: a systematic review and meta-analysis. BMJ Supportive & Palliative Care, bmjspcare–2021-003507. https://doi.org/10.1136/bmjspcare-2021-003507
24. Yuan, T., Zhou, Y., Wang, T., Li, Y., & Wang, Y. (2024). Impact research of pain nursing combined with hospice care on quality of life for patients with advanced lung cancer. Medicine, 103(22), e37687–e37687. https://doi.org/10.1097/md.0000000000037687