



## CROSS-DISCIPLINARY CARE TEAMWORK PROCESSES IN HEALTHCARE: A SYSTEMATIC REVIEW

Atheer Almotairi<sup>1</sup>, Zafar Ahmad<sup>2\*</sup>, Mohammed Hassan Alhothali<sup>3</sup>, Abdulaziz Obid Aldosari<sup>4</sup>, Sarah Mohammed Almutairi<sup>5</sup>, Talal Eqab Alharthi<sup>6</sup>, Salh Saeed Al Zahrani<sup>7</sup>, Faten Eid Al-Mutairi<sup>8</sup>, Maha Abdullah Dawi<sup>9</sup>, Manar Nawar Al-Matraf<sup>10</sup>, Samia Mohammed Alotaibi<sup>11</sup>, Seham Mohammed Alzahrani<sup>12</sup>

<sup>1</sup>King Abdullah Specialized Children's Hospital (KASCH)

<sup>2\*</sup>Assistant Professor, ORCID: <https://orcid.org/0000-0003-2216-8317>

<sup>3</sup>Primary Health Care -Batha Quresh

<sup>4</sup>Wadi Dawaser Hospital

<sup>5</sup>Compliance Assistance Administration, General Directorate Health Affairs, Riyadh

<sup>6</sup>Primary Health Care -Batha Quresh

<sup>7</sup>King Abdulaziz Hospital, Makkah

<sup>8</sup>Almattar Primary Health Care Second Cluster, Almajmah Region

<sup>9</sup>Sajer First Primary Health Care Centre

<sup>10</sup>Umm Al Qura University Medical Center

<sup>11</sup>Sajer First Primary Health Care

<sup>12</sup>Medical Rehabilitation Hospital, Madinah

**\*Corresponding Author:** - Zafar Ahmad

<sup>2\*</sup>Assistant Professor, ORCID: <https://orcid.org/0000-0003-2216-8317>

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### Abstract

**Background:** The research was carried out to highlight the importance of a cross-disciplinary approach to teamwork in the healthcare sector.

**Aim:** The purpose of the systematic review is to carefully analyze the existing literature on the cross-disciplinary approach practiced in healthcare institutions and its impact on the overall efficiency associated with it.

**Method:** A systematic search of databases including PubMed and Google Scholar was conducted to identify relevant studies published between 2005-2023. The inclusion criteria for this study consisted of selecting articles written in English that specially examined the cross-disciplinary teamwork approach and its impact on healthcare institutions, professionals, and patients. Additionally, the chosen articles had to use well-established measurement approaches that provide valuable data on the cross-disciplinary teamwork that affects patients' health in the hospital setting. After initial screening and quality assessment, ten studies were included in the synthesis.

**Results:** It revealed a consistent pattern of cross-disciplinary teamwork processes directly linked with patient care and services provided by the healthcare institutions.

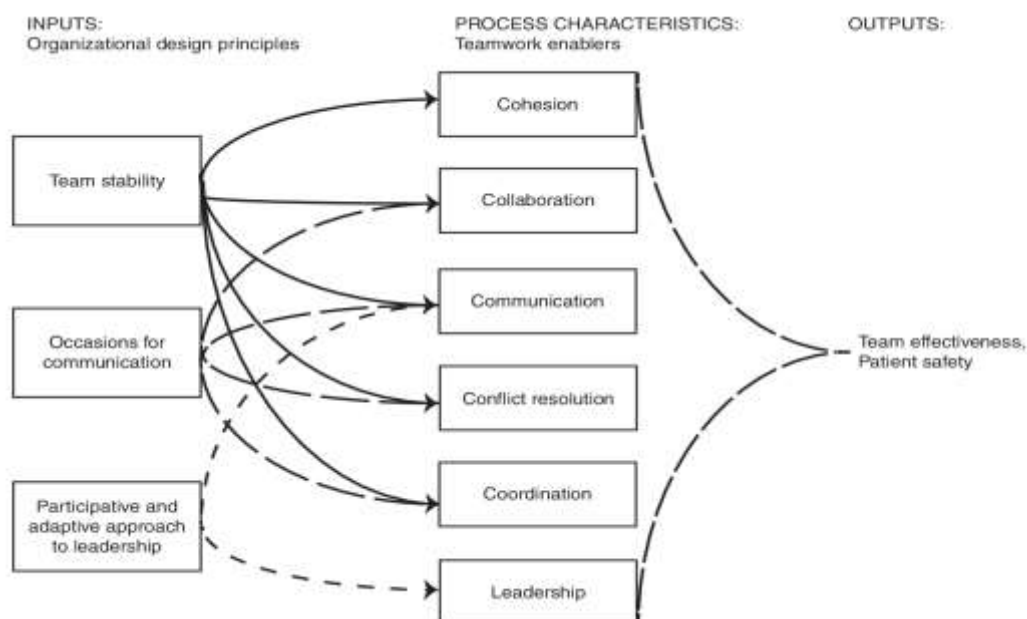
**Conclusion:** The review underscores the importance of cross-disciplinary teamwork processes in hospital settings. The research concluded that the cross-disciplinary teamwork processes hold the potential as an effective strategy for enhancing patient care and teamwork among healthcare professionals.

**Keywords:** Cross-disciplinary, Teamwork Processes, Healthcare

**Introduction**

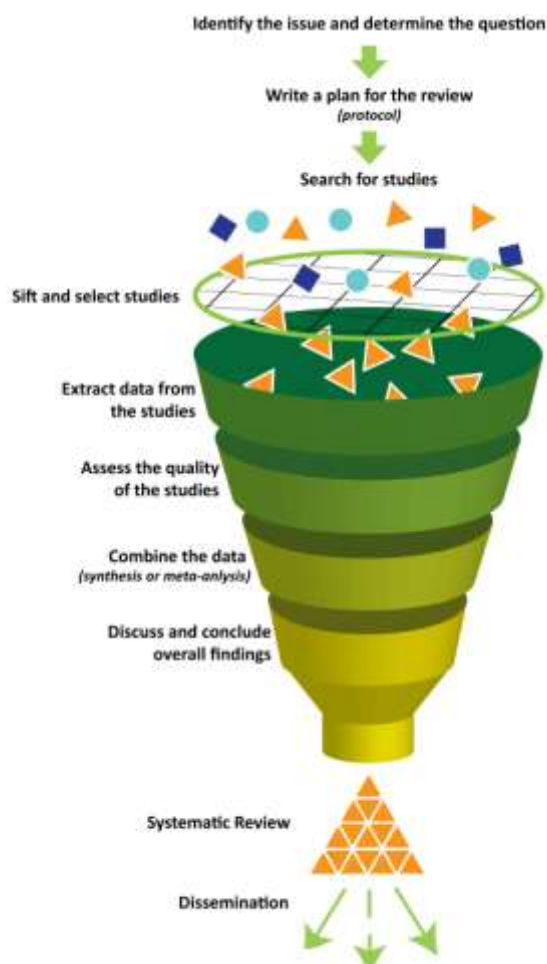
1. Clinical care has become more complex and specialized, forcing medical staff to deliver complicated health services and to quickly learn new skills. Other factors, such as aging populations with older adults living longer, and the increase of chronic diseases (diabetes, cancer, heart disease) as well as the task of managing patients suffering from multiple health problems have forced medical staff into the multidisciplinary approach (Zaher et al., 2022) Researchers have found that Cross-disciplinary teamwork care approach in Saudi Arabia when healthcare professionals work together, the number of medical errors is reduced and the level of patient safety rises; additionally, teamwork has been found to diminish the work-culture issues that lead to professional burnout. One reason is that health teams that include social workers, occupational therapists and other specialty areas help break down the hierarchy and centralized power of health organizations, giving more leverage to healthcare workers and producing a higher level of work and job satisfaction. Another factor is improved patient-centered care for the long-term. Because teamwork is centered on solid communication, patients and their families sometimes feel more at ease and report that they accept prescribed treatments and feel more satisfied with their healthcare regimens when a multidisciplinary teamwork approach is in place. (Robinson & Cottrell, 2005; (Alharbi et al., 2022; Alruwaili et al., 2022; Huraira et al., 2023; Shahbal et al., 2022)

Today’s patients have complex health needs and typically require more than a single discipline to address issues regarding their health status to attain improved health outcomes. Many of the patients’ adverse events and poor health outcomes may be attributed to misunderstandings and/ or poor communication among members of the interprofessional teams. Even though physicians and nurses work together, their academic courses are typically separate, and their training in effective strategies of communication and care provision is often postponed to future professional practice (Buring et al., 2009; Hazzazi et al., 2023; Alruwaili et al., 2023; Alruwaili et al., 2023; Almutairi et al., 2022; Alotaibi et al., 2022). Studies support the introduction of cross-disciplinary teamwork processes to healthcare professionals (Ruebling et al., 2014).



**Figure 1:** Cross-Disciplinary Teamwork Processes Lead Patient Safety

Interest in healthcare teamwork has increased in the last decade. Consequently, healthcare professionals have often found themselves the subjects of organizational interventions to improve or implement teamwork, and are expected to work efficiently over the boundaries of traditional professions. An underlying assumption is that teamwork can make healthcare more efficient (Reeves et al., 2010). Previous research shows that teamwork improves patient care, patient safety, and organizational effectiveness, and increases job satisfaction. It has also been shown that the lack of adequate team behaviors can increase the likelihood of patients experiencing major complications after surgery (Mazzocco et al., 2009; AL ALI et al., 2022; Alaklabi et al., 2023; Hazzazi et al., 2023). Cross-disciplinary teams are already at work at major health institutions, with documented results. The Cleveland Clinic employs a multidisciplinary approach to treat cancer patients; a “tumor board” of practitioners meet as a team to discuss difficult cancer cases and to work out the best way to treat each patient. In October 2012, physicians at Massachusetts General Hospital created a multidisciplinary rapid-response team to coordinate care for pulmonary embolism (PE) patients. At Johns Hopkins Medical Center, the Multidisciplinary Pancreatic Cancer Clinic integrates international experts in the fields of basic research, pathology, radiology, medical, radiation, and surgical oncology. Each year, over 240 Whipple procedures are performed at Johns Hopkins. Patients are referred from all over the world to be operated on by their highly experienced team. In addition, last year, over 80 distal pancreatectomies were performed.



**Figure 2:** Conceptual Diagram Systematic Review

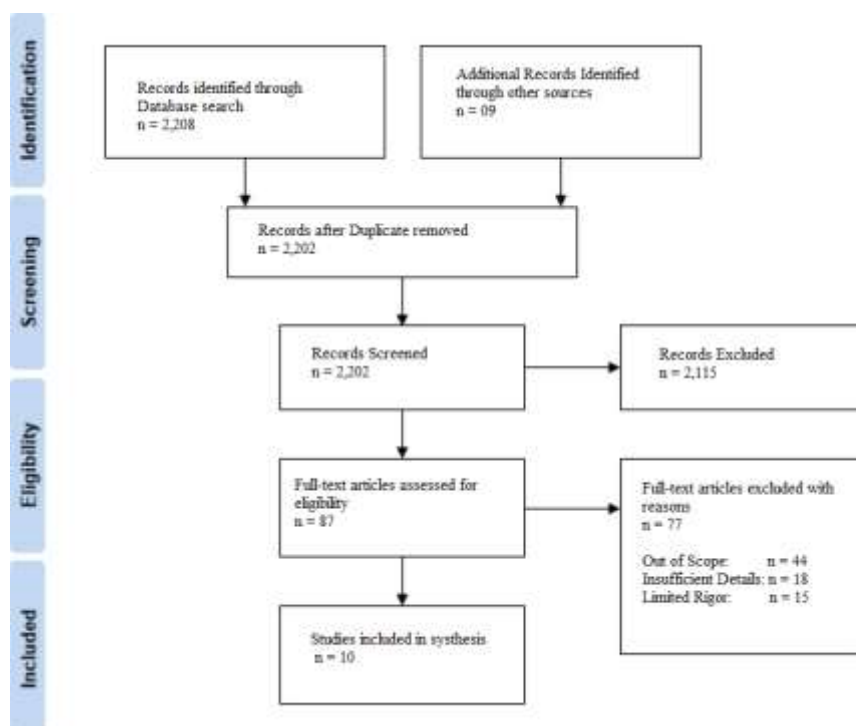
## Methodology

### Literature Search

A comprehensive literature search was conducted to identify relevant studies investigating the impact of cross-disciplinary care teamwork processes in healthcare institutions. The search was performed using articles published and included in databases like Google Scholar and PubMed. An initial search

of databases for research on, “cross-disciplinary care” resulted in 300 results while a search on ‘Teamwork Process in healthcare” resulted in 275 while results for ‘cross-disciplinary teamwork” resulted in 350 results.

The search strategy employed the use of keywords to optimize the retrieval of relevant articles. The following search terms and their variations were used: "Teamwork Approach OR Teamwork processes," "Teamwork in Healthcare". The search was not limited by publication date however only the publications in the English language were accessed. The PRISMA diagram provides complete details for research identified, screened, and included in the systematic review.



**Figure 3:** PRISMA Flow Diagram for Systematic Review

### Inclusion/ exclusion Criteria

Studies were included in the review if they investigated cross-disciplinary care teamwork processes in healthcare institutions and assessed the impact of teamwork processes on patients care and health improvements.

Included studies with cross-disciplinary care approach and teamwork processes in healthcare setup by clinicians and physicians.

Studies were excluded if they were not relevant to cross disciplinary care approach and teamwork processes in healthcare setups, another reason for exclusion was duplicate publications and non-scientific research.

### Data Extraction

To gain a better understanding of the similarities and general direction of the research, data related to study design, reported illness, sample size, intervention type, details pertaining to the intervention/s, time after which the assessment was performed and findings and scales are measures used in the study was noted and extracted from original articles. Where outcome measures related to illness perception and self-efficacy and illnesses were similar types as coronary artery disease.

**Systematic Analysis of Researches**

	Author	Research Title	Methodology	Research Aim	Cross-Disciplinary Team	Team Enablers	Output
1	(Moussa et al., 2020)	Effectiveness Of Multidisciplinary Team Members In A Complex, High-Risk, And Stressful Critical Care Unit (Ccu)	Descriptive Correlation Study Design, Structured Questionnaires	This study aims to evaluate the performance effectiveness of multidisciplinary team members working in the complex, risky and stressful environment of the critical care unit of Alansar General Hospital (AGH).	Physician, Clinician, Nurses, Paramedical Staff	Teamwork, leadership, collaborative work, Communication	Multidisciplinary teams must be provided effective training to promote quality communication, knowledge sharing, and proper team structuring to improve quality of health care
2	(Zaher et al., 2022)	Effect of introducing interprofessional education concepts on students of various healthcare disciplines: a pre-post study in the United Arab Emirates	Pre-post intervention quantitative research design	To investigate the effect of one of the first experiences of IPE in the UAE, which was purposefully designed in alignment with the principles of the Situated Learning Theory (SLT), on the readiness for interprofessional learning and collaboration among students of various healthcare disciplines in the UAE.	Physicians, Nurses, Pharmacy, Physiotherapist	Collaborative activity, interdisciplinary practice, team training, and cross training.	The findings of this study encourage other universities in the MENA region to adopt IPE to improve future health professionals' capacity to develop shared understanding and mutual respect within cross-disciplinary teams. This, ultimately, feeds into improved quality of care and patient outcomes.
3	(Robinson & Cottrell, 2005)	Health professionals in multi-disciplinary and multi-agency teams: Changing professional practice	The research was qualitative, multi-method study involving three phases, including observation and documentary analysis; interviews; and focus groups around decision making and knowledge sharing.	The research reflects on the perspectives and experiences of health professionals and their colleagues in multi-agency teams about the impact of multi-agency teamwork on their professional knowledge and learning, and on their ways of working.	Health Professionals, multi-agency, multi-professional team	Collaboration, interdisciplinary practice, Communication	The conclusion reflects on some implications of our findings in theory and practice for professionalism within integrated, multi-professional teams that are building new ways of working.

4	(Tanco et al., 2011)	Healthcare teamwork best practices: lessons for industry	Brainstorming session among the members of the research team to pinpoint the lessons based on their experience with healthcare Professionals.	Organizations can also be enriched by healthcare. In particular, this paper aims to show industry that important lessons can be learned regarding how teamwork is generally managed within healthcare	Healthcare professionals, Industry professionals	training, and cross training.	Organizations need to develop teamwork frameworks focused on involving every employee in cross-disciplinary, empowered and trained teams. Moreover, from a team perspective, special care must be shown when defining clear roles, focusing on end clients, formulating shared objectives and facilitating internal communications.
5	(Blazeby et al., 2006)	Analysis of clinical decision-making in multi-disciplinary cancer teams	Consecutive upper gastro intestinal MDT meetings held at Bristol Royal Infirmary were prospectively studied	This study evaluated team decision-making in upper gastrointestinal cancer. Consecutive MDT treatment decisions were recorded for patients with esophageal, gastric, pancreatic and peri-ampullary tumors	Physicians, Clinician, Nurses, Physiotherapist	Cohesion, collaboration, communication	Results show that monitoring concordance between MDT decisions and final treatment implementation is useful to inform team decision-making. For upper gastrointestinal cancer, MDTs require more information about co morbid disease and patient choice to truly optimize the implementation of multi-disciplinary expertise
6	(Rydenfält et al., 2017)	Organizing for teamwork in healthcare: an alternative to team training?	The alternative approach pursued here explores the promotion of teamwork by means of organizational design. A wide and pragmatic definition of teamwork is applied: a team is considered to be a group of people that are set to work together on a task, and teamwork is then what they do in relation to their task. The input – process – output model of teamwork provides structure to the investigation.	The purpose of this paper is to explore how organizational design could support teamwork and to identify organizational design principles that promote successful teamwork	Physicians, Clinician, Nurses, Physiotherapist	Communication , discipline, coordination	Six teamwork enablers from the healthcare team literature – cohesion, collaboration, communication, conflict resolution, coordination, and leadership – are discussed, and the organizational design measures required to implement them are identified. Three organizational principles are argued to facilitate the teamwork enablers: team stability, occasions for communication, and a participative and adaptive approach to leadership.

7	(Manser, 2009)	Teamwork and patient safety in dynamic domains of healthcare: a review of the literature	A literature search was carried out consulting the databases PubMed, MEDLINE via OVID, ISI Web of Knowledge, and PsychINFO.	The research examines current research on teamwork in highly dynamic domains of healthcare such as operating rooms, intensive care, emergency medicine, or trauma and resuscitation teams with a focus on aspects relevant to the quality and safety of patient care.	Physicians, Clinician, Nurses, Physiotherapist	collaborative activity, interdisciplinary practice, team training, and cross training.	Evidence from three main areas of research supports the relationship between teamwork and patient safety:
8	(Dinh et al., 2020)	Cross-Disciplinary Care: A Systematic Review on Teamwork Processes in Health Care	Identified and coded 1,818 relevant, English, and peer-reviewed journal articles using a teamwork processes rubric. The majority relied on quantitative methods.	This review helps clarify the status quo, and thereby opens up potential areas of inquiry.	Physicians, Clinician, Nurses, Physiotherapist	Collaboration, Communication	Of all disciplines, medicine focused most on transition processes, whereas those from team science centered more highly on action processes. There were also finer grained disciplinary differences in content areas of communication and collaboration.
9	(Finn et al., 2010)	Some unintended effects of teamwork in healthcare	The paper brings together data from two originally separate ethnographic studies	To investigate Teamwork has been emphasized as a key feature of health service reform, essential for safe, efficient and patient-centered care	Physicians, Clinician, Nurses, Physiotherapist	Belongingness, Membership	Teamwork is inherently positive, revealing its opaque ideological functions as a discursive resource within the context of healthcare. The value of such critical reflection is highlighted, exposing these opaque ideological and performative processes
10	(Ndoro, 2014)	Effective multidisciplinary working: the key to high-quality care	Descriptive research study design	The research explores multidisciplinary team working, interdisciplinary, trans-disciplinary and effective collaborative practice in order to provide high-quality patient care	Nurses, Psychologist, Occupational therapy, doctors, psychiatrists, health visitors and social workers	Care, compassion, competence, communication, courage and commitment	Multidisciplinary working and achieving effective collaborative practice is important in order to provide high-quality care

**DISCUSSION**

The present systematic review aimed to investigate the cross-disciplinary teamwork work processes associated with patients’ treatment in healthcare sector. The review synthesized findings from a range of studies, including those conducted by (Moussa et al., 2020), (Zaher et al., 2022), (Robinson & Cottrell, 2005), (Tanco et al., 2011), (Blazeby et al., 2006), (Rydenfält et al., 2017), (Manser, 2009), (Dinh et al., 2020), (Finn et al., 2010), (Ndoro, 2014). Through the analysis of these studies, valuable insights into the potential benefits of the crossdisciplinarity approach through teamwork processes in healthcare sector were highlighted.

Several studies focused on the cross-disciplinary teamwork processes impact on patients care were included. An important aspect of cross-disciplinary teams working is the use of evidence to inform current clinical practice. argues that evidence-based practice is also important when professionals

work as a team since it helps the advancement of research to establish better methods of patient care. Evidence-based practice as the incorporation of evidence from research, clinical experience and patients' preferences into decisions about the health of individual patients. In order to achieve effective multidisciplinary team working, team members need to engage in strategic management processes that will help to develop thinking and strategic learning in their practice in order to provide better patient care (Ndoro, 2014). Teamwork in health care has been studied and subsumed under numerous guises across disciplines: crew resource management, interprofessional collaboration, nontechnical skills, patient safety culture, problem-based learning competencies, safety-relevant topics (e.g., patient safety, safety climate attitudes), and so on. This area is examined as a health services issue and studied alongside critical outcomes such as patient safety.

The rise of the interprofessional literature itself suggests that there is increasing interest in the conceptualization and practice of group-based care in medicine (Dinh et al., 2020). Empirical evidence also supports the argument that system improvements such as formal practices to strengthen communication and relationships among healthcare providers (57,71) and specific team training interventions have the potential to raise clinicians' awareness of these issues and to support effective team behavior (Manser, 2009).

Multi-disciplinary teams are considered central to the delivery of high-quality cancer care and treatment decision-making is a key function. It was found that 15.1% of treatment decisions made at the upper gastrointestinal multidisciplinary team meetings at United Bristol Healthcare Trust were not implemented (95% confidence intervals 11.1% to 20.0%). Reasons for cross-disciplinary decisions changing were mostly related to lack of information concerning patients' wishes or co-morbid disease and only eight decisions changed because unexpected metastatic disease was discovered at surgery. It is therefore proposed that monitoring concordance between multidisciplinary team treatment decisions and final treatment implementation is an informative way of evaluating multidisciplinary team decisions. It is also proposed that where team treatment decisions are not implemented that finding out the reasons for changing the management plan will subsequently inform the multidisciplinary team of areas that need further attention (Blazeby et al., 2006).

### **Implementation**

The current systematic review on cross-disciplinary teamwork process and its association with patients care and recovery will help healthcare professionals in local context (Saudi Arabia) to implement the approach as an effective strategy to enhance attitudes and behaviors of clinician, physicians and other related healthcare professionals towards patients' safety and care. Results can be achieved through a complicated process of obtaining, analyzing, choosing, and communicating teamwork processes by implementing cross-disciplinary approach in healthcare institutions which leads to improved wellbeing for service providers and patients.

### **Limitations**

Despite the promising findings, it is important to acknowledge the limitations across the studies. Due to limited studies with similar variables the heterogeneity in this study's design, patient population, and outcome measures poses challenges for direct comparison and generalization of results. Additionally, variations in the implementation of the cross-disciplinary approach to teamwork processes, along with potential confounding factors, might influence the observed outcomes.

### **Conclusion**

In conclusion, the studies included in this systematic review collectively suggest that the cross-disciplinary approach of teamwork processes holds potential as an effective strategy. Multidisciplinary working and achieving effective collaborative practice is important in order to provide high-quality care. There are advantages and limitations to multidisciplinary, trans-disciplinary and inter-professional working. At their best, they can positively affect team members



and the quality of patient care, but notable examples have highlighted how conflict and ineffective ways of team working can result in lapses of care—which have in turn sparked renewed public interest and policy initiatives. Finally, this article recommends adherence to ethics of confidentiality for cross disciplinary teamwork processes as they communicate information and/or data regarding patient care in a way that is easy to understand in order to avoid confusion on patient care.

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