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Evaluating the impact of the multidisciplinary team approach on long-term care patient outcomes: a comparative study in two hospitals in Saudi Arabia

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ABSTRACT

Background: As populations age, long-term care (LTC) facilities increasingly manage patients with multimorbidity, frailty, and cognitive decline. Traditional single-discipline models often fail to address these complexities, whereas multidisciplinary teams (MDTs) enhance coordinated, patient-centered care. In Saudi Arabia, MDT integration aligns with Vision 2030's goals for efficient, family-centered healthcare delivery.

Methods: A 6-month quasi-experimental comparative study was conducted in two LTC hospitals in Riyadh: Care Medical Malaz (CMM), implementing the MDT model, and Care Medical Rawabi (CMR), using a conventional single-provider approach. Data from patient records and validated survey tools (FAMCARE, AHRQ Teamwork Climate, and patient satisfaction questionnaires) were analyzed using SPSS v28. Independent *t*-tests, chi-square tests, and regression analyses evaluated differences in clinical, staff, and patient outcomes, with $p < 0.05$ considered significant.

Results: CMM significantly outperformed CMR across key performance indicators, including higher restraint and catheter removal rates, greater family meeting frequency, and more swallowing assessments ($p < 0.001$). Staff satisfaction was substantially higher in leadership, communication, and professional growth domains (overall $p < 0.001$). Patient satisfaction scores were superior in care quality, safety, and family involvement (overall $p < 0.001$), reflecting enhanced ethical governance and teamwork culture.

Conclusion: The MDT approach demonstrated measurable improvements in clinical outcomes, safety culture, and satisfaction among LTC patients, staff, and families. Findings support the expansion of MDT frameworks in Saudi LTC hospitals to achieve Vision 2030's integrated healthcare objectives.

Keywords: Multidisciplinary team, long-term care, patient outcomes, staff satisfaction, Saudi Arabia, family-centered care.

Introduction

Long-term care (LTC) facilities are increasingly vital as populations age and chronic diseases rise. Patients in LTC often present with multimorbidity, frailty, and cognitive decline, requiring complex, coordinated care. Traditional single-discipline models are insufficient, making multidisciplinary teams (MDTs) essential for delivering holistic, patient-centered care that

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integrates diverse expertise and shared decision-making [1,2]. MDTs—comprising physicians, nurses, pharmacists, rehabilitation specialists, dieticians, and social workers—enhance communication, safety, and patient outcomes [3].

In Saudi Arabia, MDT care aligns with Vision 2030's healthcare transformation goals emphasizing integration, efficiency, and family-centered care [4]. Studies highlight that collaborative models strengthen interprofessional communication and empower family involvement in care planning, improving adherence and satisfaction [5,6]. This culturally attuned approach is particularly valuable in LTC settings, where prolonged stays require coordination between clinical and familial caregivers.

Polypharmacy remains a major safety concern in LTC, especially among elderly patients with multiple chronic conditions. Inappropriate medication use heightens the risk of adverse events and hospitalizations [7]. Evidence indicates that pharmacist-led MDT deprescribing interventions enhance medication safety and appropriateness [8,9]. In Saudi Arabia, MDT-based medication review programs have improved adherence and reduced complications, optimizing resource use in line with Vision 2030 priorities [10,11].

Patient safety outcomes such as falls and medication errors are closely tied to teamwork and safety culture. Effective MDT collaboration fosters transparent communication, structured reporting, and collective accountability—key elements for minimizing risks and enhancing trust [12,13].

Despite global recognition of MDT benefits, empirical evidence from Saudi LTC hospitals remains scarce. Existing research largely focuses on acute settings, leaving LTC outcomes underexplored. This study compares two LTC hospitals—one applying an MDT model and one using conventional care - to assess impacts on safety, medication management, and family engagement. Findings will generate localized evidence to inform healthcare policy and support the sustainable development of Saudi Arabia's LTC system [14].

Methodology

This study adopted a quasi-experimental comparative design to evaluate the impact of the MDT approach on patient outcomes, staff satisfaction, and family engagement in LTC hospitals in Riyadh, Saudi Arabia. The research compared two institutions managed under the same healthcare organization: Care Medical Malaz Hospital (CMM), where the MDT model was implemented, and Care Medical Rawabi Hospital (CMR), which operated under a traditional single-provider model. The 6-month study combined retrospective and prospective data collection to capture both clinical and experiential outcomes.

The study population included all LTC patients admitted for at least 7 days during the study period, as well as healthcare professionals directly involved in their care and family members who participated in decision-making processes. Inclusion criteria encompassed adult patients receiving LTC who met the minimum stay duration, staff working in direct patient care roles, and families engaged in care conferences. Exclusion criteria were patients discharged within 7 days and individuals declining consent for participation in surveys or interviews.

Data collection encompassed both objective and subjective indicators. Clinical performance data were extracted from hospital records, focusing on key performance indicators (KPIs) such as the number of full-code and do-not-resuscitate (DNR) patients, restraint and invasive device removal, polypharmacy management, swallowing assessments, incidence of falls, hospital-acquired pressure injuries (HAPI), and the frequency of family meetings. To assess the human dimensions of care, three structured survey tools were utilized: the FAMCARE Scale for family satisfaction, the AHRQ Teamwork Climate Survey for staff collaboration and satisfaction, and adapted patient satisfaction questionnaires specific to LTC settings.

Data were analyzed using IBM SPSS version 28. Descriptive statistics were applied to summarize demographic and outcome variables through means, standard deviations, frequencies, and percentages. Inferential analyses were conducted using independent t-tests for continuous variables and chi-square tests for categorical data to compare results between the MDT and non-MDT hospitals. Multivariable regression analyses were performed to adjust for potential confounding factors such as age, comorbidities, and length of stay. A p-value of less than 0.05 was considered statistically significant, indicating meaningful differences between the two hospital models.

Ethical approval was obtained from the Institutional Review Board (IRB) of Care Medical Hospitals. Ethical approval number: IRB-11/220925 with a date of: 22/9/2025. Participation in the survey components was voluntary, and informed consent was obtained from all staff and family respondents. To ensure confidentiality, all patient data were de-identified before analysis, and survey responses were collected anonymously. Data were stored in password-protected databases accessible only to the research team. The study posed minimal risk to participants, with no interventions performed beyond routine care practices. The research team adhered to institutional and national ethical standards for the conduct of human subjects research.

Results

Clinical performance indicators

The comparison of clinical outcomes between CMM (MDT hospital) and CMR (non-MDT hospital) revealed substantial differences in favor of the MDT model. CMM demonstrated higher rates of restraint and invasive

device removal, greater completion of swallowing assessments, and a notably higher frequency of family meetings. The percentage of patients with DNR orders was also higher at CMM, reflecting improved communication and care planning with families. Although the incidence of HAPI and falls was low across both settings, other performance metrics clearly favored the MDT hospital, suggesting that structured multidisciplinary collaboration enhances patient safety and care quality (**Table 1**) (Fig. 1).

Staff satisfaction

Analysis of staff satisfaction revealed consistently higher ratings across all evaluated domains in the MDT hospital (CMM). Staff expressed greater satisfaction with leadership performance, communication clarity, distribution, and opportunities for professional growth. The collaborative MDT environment was associated with significantly improved collegial support and appreciation, reflecting a more cohesive and empowered workforce compared to the traditional care structure at CMR (**Table 2**).

Patient satisfaction (quantitative findings)

Patient satisfaction outcomes followed a similar pattern, with significantly higher mean scores in nearly all measured areas among patients treated under the MDT model. Respondents at CMM rated overall care quality, environmental safety, allied health services, and family engagement markedly better than those at CMR. These findings suggest that MDT structures not only improve technical care delivery but also enhance the interpersonal and supportive dimensions of patient experience (**Table 3**, Fig. 2).

Patient satisfaction (categorical analysis)

Categorical analysis of satisfaction levels reinforced the quantitative results. The proportion of "very satisfied" patients was significantly higher in the MDT hospital across all domains, particularly regarding family involvement, room cleanliness, and perceived safety. These results emphasize the cultural and operational advantages of integrating families and multidisciplinary professionals into the care process (**Table 4**).

Discussion

The current comparative analysis between the two hospitals revealed significant differences across all measured parameters, including clinical performance indicators, staff satisfaction, and patient satisfaction. The overall findings demonstrate that the presence of a structured MDT model, as implemented in CMM, leads to substantial improvements in clinical decision-making, ethical governance, communication, and overall satisfaction compared to CMR.

Regarding the clinical performance indicators, the number of full-code patients was considerably higher in CMM (mean 71.9 ± 6.7) than in CMR (34.3 ± 2.6), with a significant difference (p = 0.001). This suggests a more proactive approach to acute management and resuscitation readiness supported by MDT-driven decision-making. Similarly, the number of patients with DNR orders was also higher in CMM (mean 60.8 ± 4.3) compared to CMR (14.5 ± 1.9; p = 0.001), representing 45.9% versus 29.8% of total patients, respectively. These results reflect improved ethical decision-making processes guided by interdisciplinary discussions and patient-centered reviews. Comparable studies, such as AbdelAziz et al. [15], found that only 27%–36% of physicians consistently referred cases to MDTs for ethical decisions, often leading to late or inconsistent DNR orders. Similarly, Elsaadi and Ali [16] observed that structured MDT meetings improved the timeliness and appropriateness of DNR documentation in oncology care. In the present study, the CMM model demonstrated stronger compliance with evidence-based ethical review processes, aligning with Al Khalfan et al. [17], who reported that MDT care in ICU settings reduced mortality from 37.8% to 14.3% through coordinated decision-making. Thus, the higher rates of full-code and DNR management at CMM indicate a mature ethical and clinical review system.

The application and removal of physical restraints also differed markedly between the two hospitals. The mean number of patients on restraints was higher at CMM (13 ± 3.2) than CMR (6.7 ± 1.4; p = 0.001), which may reflect the higher acuity and complexity of cases at the tertiary center. However, CMM also demonstrated a significantly higher percentage of restraint removals (32.5% *vs.* 15.2%; p = 0.030), indicating better adherence to patient safety and ethical review policies. Albasha et al. [18] emphasized the "brief but often" approach to MDT education and consistent documentation audits to minimize restraint duration, while Randell et al. [19] advocated for clear MDT role delineation to reduce unnecessary physical restrictions. Our findings align with these recommendations, suggesting that while the initial restraint use was higher due to patient complexity, the active monitoring and removal rates at CMM reflect superior compliance with ethical restraint management protocols.

Similarly, the use and removal of indwelling Foley catheters (IFCs) showed significant differences between hospitals. CMM recorded 38.4 ± 6.4 patients with IFCs compared to 12.9 ± 3.3 at CMR (p = 0.001), yet demonstrated a higher percentage of removals (16.9% *vs.* 6.8%; p = 0.069). Although CMM's higher catheter use reflects a more critical patient population, the higher removal percentage indicates strong adherence to multidisciplinary reviews. Alghamdi et al. [20] found that audit-based MDT interventions substantially improved catheter management and reduced infection rates. Likewise, Korylchuk et al. [21] observed that collaborative care teams significantly decreased invasive-device-related complications. These results collectively suggest that CMM's MDT structure fosters active quality improvement aligned with international standards.

Table 1. Comparison between both hospitals regarding KPIs.

	CMM	CMR	*p* value
Number of full code			0.001
Mean ± SD	71.9 ± 6.7	34.3 ± 2.6	
Median (Range)	71.5 (60 - 80)	34 (31 - 38)	
Number of DNR			0.001
Mean ± SD	60.8 ± 4.3	14.5 ± 1.9	
Median (Range)	61.5 (54 - 66)	15 (12 - 18)	
% Of DNR over total patients			0.001
Mean ± SD	45.9 ± 3.3	29.8 ± 3.8	
Median (Range)	45.4 (41.2 - 52.4)	29.4 (25 - 36.7)	
Number of patient on restraint			0.001
Mean ± SD	13 ± 3.2	6.7 ± 1.4	
Median (Range)	12 (9 - 19)	7 (5 - 9)	
Number of removed restraints			0.001
Mean ± SD	4.1 ± 0.8	1 ± 0.9	
Median (Range)	4 (3 - 5)	1 (0 - 2)	
% Removed restraints			0.030
Mean ± SD	32.5 ± 6.8	15.2 ± 14.2	
Median (Range)	31 (25 - 41.7)	15.6 (0 - 33.3)	
Number of patient with IFC			0.001
Mean ± SD	38.4 ± 6.4	12.9 ± 3.3	
Median (Range)	39.5 (27 - 48)	13 (8 - 18)	
Number of removed IFC			0.001
Mean ± SD	6.3 ± 1.5	1 ± 1.4	
Median (Range)	6.5 (4 - 8)	0 (0 - 3)	
% Removed IFC			0.069
Mean ± SD	16.9 ± 5.9	6.8 ± 9.6	
Median (Range)	16 (10 - 25.9)	0 (0 - 21.4)	
Swallowing recommendation			0.001
Mean ± SD	15.4 ± 5.8	1.5 ± 1.5	
Median (Range)	14 (9 - 25)	1.5 (0 - 4)	
% Swallowing			0.001
Mean ± SD	20.4 ± 6.7	3.2 ± 3.2	
Median (Range)	20.5 (11.3 - 31.3)	3 (0 - 8.5)	
Number of fall incident			1.000
Mean ± SD	0 ± 0	0 ± 0	
Median (Range)	0 (0 - 0)	0 (0 - 0)	
Number of hapi incidents			0.264
Mean ± SD	0.1 ± 0.4	0.4 ± 0.5	
Median (Range)	0 (0 - 1)	0 (0 - 1)	
HAPI incidence			0.370
Mean ± SD	0.3 ± 0.8	0.8 ± 1	
Median (Range)	0 (0 - 2.2)	0 (0 - 2)	
Total number of family meeting			0.001
Mean ± SD	46.9 ± 4.9	5 ± 1.3	
Median (Range)	47.5 (41 - 54)	5.5 (3 - 6)	
% Family meeting			0.001
Mean ± SD	63.6 ± 12.3	10.2 ± 2.5	
Median (Range)	60.6 (51.2 - 91.1)	11.1 (6.1 - 12.5)	

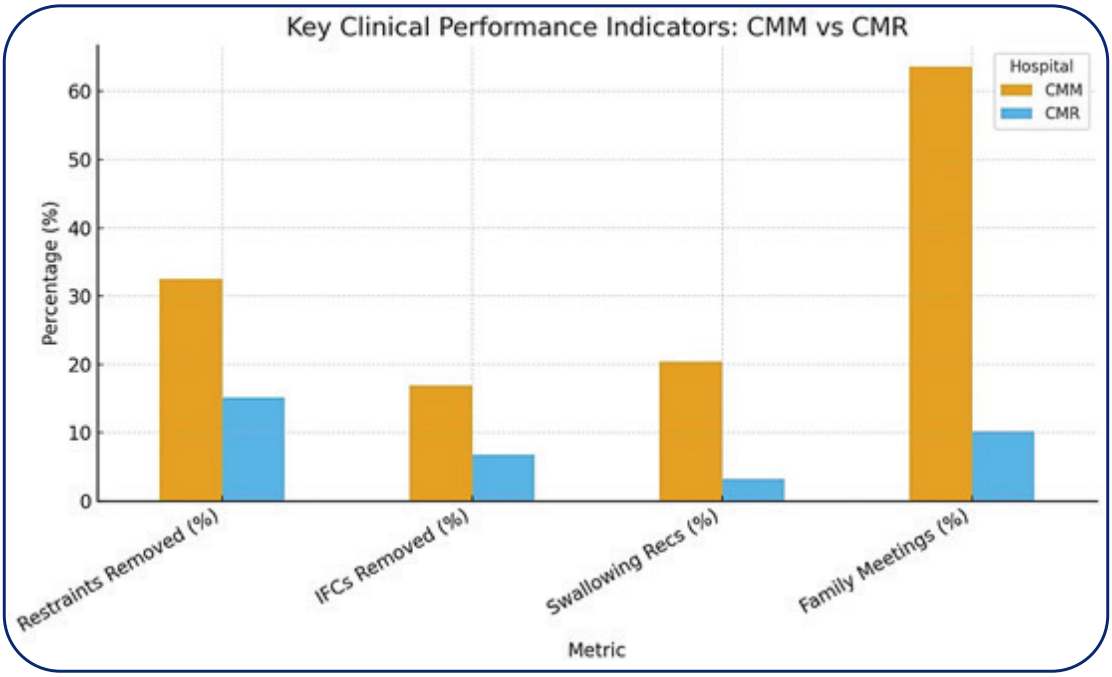

Figure 1. Key clinical performance indicators.

Table 2. Comparison between both hospitals regarding staff satisfaction.

	CMM (*n* = 144)	CMR (*n* = 50)	*p* value
Head nurse performance			0.000
Mean ± SD	9.5 ± 0.8	8.4 ± 1.5	
Median (Range)	10 (8 - 10)	9 (2 - 10)	
Area manager performance			0.000
Mean ± SD	9.6 ± 0.7	8.6 ± 1.2	
Median (Range)	10 (8 - 10)	9 (5 - 10)	
Director of nursing performance			0.000
Mean ± SD	9.6 ± 0.7	8.7 ± 1.1	
Median (Range)	10 (8 - 10)	9 (6 - 10)	
Resources & equipment availability			0.000
Mean ± SD	9.3 ± 0.8	8 ± 1.7	
Median (Range)	10 (8 - 10)	9 (5 - 10)	
Opportunities and professional growth			0.000
Mean ± SD	9.3 ± 0.8	8.2 ± 1.7	
Median (Range)	10 (8 - 10)	9 (3 - 10)	
Clarity and effectiveness of vommunication			0.000
Mean ± SD	9.4 ± 0.8	8.7 ± 1.4	
Median (Range)	10 (8 - 10)	9 (3 - 10)	
Workload			0.000
Mean ± SD	9.3 ± 0.9	8.2 ± 1.7	
Median (Range)	10 (8 - 10)	9 (4 - 10)	

Continued

	CMM (*n* = 144)	CMR (*n* = 50)	*p* value
Staff appreciation			0.000
Mean ± SD	9.3 ± 0.8	7.7 ± 1.8	
Median (Range)	10 (8 - 10)	7.5 (3 - 10)	
Likelihood to recommend the hospital			0.000
Mean ± SD	9.3 ± 0.8	8.3 ± 1.6	
Median (Range)	10 (8 - 10)	9 (2 - 10)	
Staff support from colleagues			0.000
Mean ± SD	9.4 ± 0.8	8.3 ± 1.7	
Median (Range)	10 (8 - 10)	9 (4 - 10)	
Overall staff satisfaction score			0.000
Mean ± SD	9.4 ± 0.5	8.3 ± 1	
Median (Range)	9.4 (8 - 10)	8.4 (4.8 - 10)	
Overall staff satisfaction			
High	116 (80.6)	11 (22)	0.000
Low	28 (19.4)	39 (78)	

Table 3. Comparison between both hospitals regarding patient satisfaction (mean ± SD).

	CMM (*n* = 123)	CMR (*n* = 50)	*p* value
Overall quality of care provided			0.037
Mean ± SD	3.5 ± 0.6	3.3 ± 0.8	
Median (Range)	4 (1 - 4)	3 (1 - 4)	
Safe and secure environment			0.006
Mean ± SD	3.6 ± 0.6	3.1 ± 1	
Median (Range)	4 (1 - 4)	3 (1 - 4)	
Physician's availability and response			0.565
Mean ± SD	3.5 ± 0.6	3.4 ± 0.7	
Median (Range)	4 (1 - 4)	4 (1 - 4)	
Care given by the nursing team			0.063
Mean ± SD	3.5 ± 0.8	3.2 ± 0.9	
Median (Range)	4 (1 - 4)	3 (1 - 4)	
Service given by the allied health providers such as "Physical therapy-Occupational Therapy			0.001
Mean ± SD	3.3 ± 0.8	2.8 ± 1	
Median (Range)	3 (0 - 4)	3 (0 - 4)	
Service given by the allied health providers such as "social work			0.024
Mean ± SD	3.5 ± 0.6	3.2 ± 0.7	
Median (Range)	4 (2 - 4)	3 (2 - 4)	
Was the family involved in the treatment plans			0.000
Mean ± SD	3.6 ± 0.5	2.6 ± 0.9	
Median (Range)	4 (2 - 4)	3 (0 - 4)	

Continued

	CMM (*n* = 123)	CMR (*n* = 50)	*p* value
Cleanliness and comfort of the room			0.000
Mean ± SD	3.5 ± 0.6	3.1 ± 0.7	
Median (Range)	4 (2 - 4)	3 (1 - 4)	
Recommend this facility to others based on your experience			0.004
Mean ± SD	3.5 ± 0.7	3.2 ± 0.7	
Median (Range)	4 (2 - 4)	3 (2 - 4)	
Overall patient satisfaction score			0.000
Mean ± SD	3.5 ± 0.6	3.1 ± 0.6	
Median (Range)	3.8 (2 - 4)	3.2 (1.4 - 4)	
Overall patient Satisfaction			
High	83 (67.5)	32 (64)	0.660
Low	40 (32.5)	18 (36)	

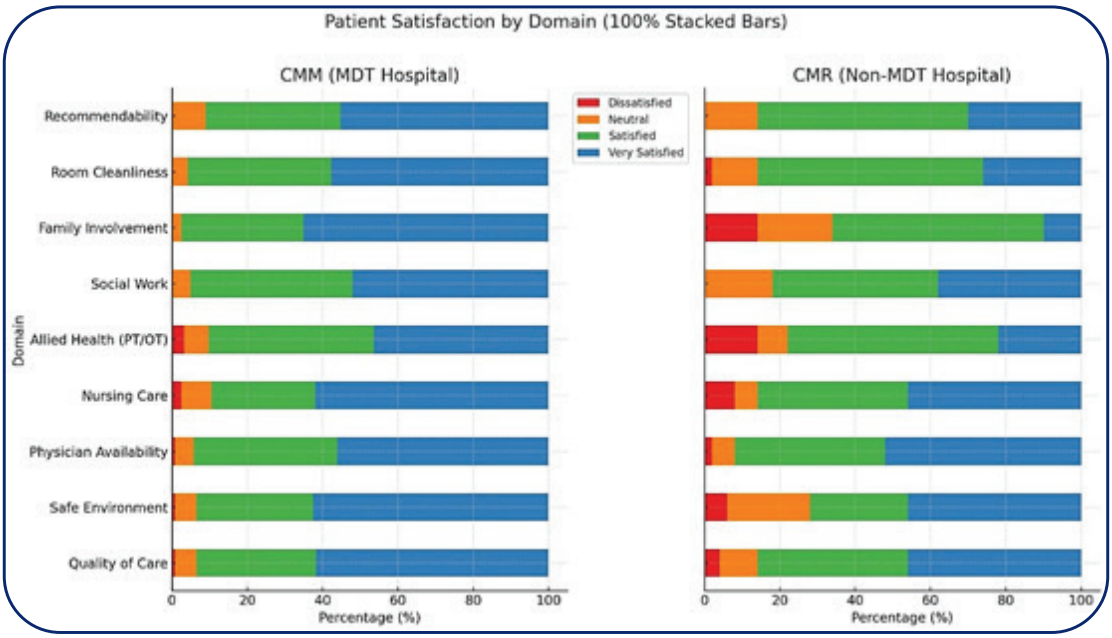

Figure 2. Patient satisfaction by domain.

Swallowing recommendations were markedly more frequent at CMM (mean 15.4 ± 5.8; 20.4%) compared to CMR (1.5 ± 1.5; 3.2%; p = 0.001), reflecting strong integration of speech pathology and rehabilitation services within the MDT framework. AbdelAziz et al. [15] reported that effective rehabilitation outcomes rely heavily on interprofessional coordination and communication between nurses, therapists, and physicians. The higher swallowing recommendation rate in our study aligns with these findings, illustrating effective multidisciplinary coordination for patient safety and recovery.

Falls and pressure injury outcomes further reinforce the benefits of MDT involvement. Both hospitals reported zero fall incidents (p = 1.000), and the number of HAPI was minimal, with CMM recording 0.1 ± 0.4 compared to 0.4 ± 0.5 in CMR (p = 0.264). Mulfiyanti et al. [22] and Bhide et al. [23] found that more than 50% of elderly care residents are at fall risk, but that active team-based education reduces falls by approximately 30%. Our zero-fall rate demonstrates superior implementation of prevention strategies and reflects a strong safety culture. The lower HAPI rates observed at CMM further align with Mistri et al. [24], who identified the critical role

Table 4. Comparison between both hospitals regarding patient satisfaction (categorical responses).

	CMM (*n* = 123)	CMR (*n* = 50)	*p* value
Overall quality of care provided			
Dissatisfied	1 (0.8)	2 (4)	0.151
Neutral	7 (5.7)	5 (10)	
Satisfied	39 (31.7)	20 (40)	
Very satisfied	76 (61.8)	23 (46)	
Safe and secure environment			
Dissatisfied	1 (0.8)	3 (6)	0.002
Neutral	7 (5.7)	11 (22)	
Satisfied	38 (30.9)	13 (26)	
Very satisfied	77 (62.6)	23 (46)	
Physician's availability and response			
Dissatisfied	1 (0.8)	1 (2)	0.883
Neutral	6 (4.9)	3 (6)	
Satisfied	47 (38.2)	20 (40)	
Very satisfied	69 (56.1)	26 (52)	
Care given by the nursing team			
Dissatisfied	3 (2.4)	4 (8)	0.101
Neutral	10 (8.1)	3 (6)	
Satisfied	34 (27.6)	20 (40)	
Very satisfied	76 (61.8)	23 (46)	
Service given by the allied health providers such as "Physical therapy-Occupational Therapy"			
Very dissatisfied	1 (0.8)	1 (2)	0.010
Dissatisfied	3 (2.4)	6 (12)	
Neutral	8 (6.5)	4 (8)	
Satisfied	54 (43.9)	28 (56)	
Very satisfied	57 (46.3)	11 (22)	
Service given by the allied health providers such as "social work"			
Neutral	6 (4.9)	9 (18)	0.014
Satisfied	53 (43.1)	22 (44)	
Very Satisfied	64 (52)	19 (38)	
Was the family involved in the treatment plans			
Very dissatisfied	0 (0)	1 (2)	0.000
Dissatisfied	0 (0)	6 (12)	
Neutral	3 (2.4)	10 (20)	
Satisfied	40 (32.5)	28 (56)	
Very satisfied	80 (65)	5 (10)	
Cleanliness and comfort of the room			
Dissatisfied	0 (0)	1 (2)	0.000
Neutral	5 (4.1)	6 (12)	

Continued

	CMM (n = 123)	CMR (n = 50)	p value
Satisfied	47 (38.2)	30 (60)	
Very satisfied	71 (57.7)	13 (26)	
Recommend this facility to others based on your experience			
Neutral	11 (8.9)	7 (14)	0.011
Satisfied	44 (35.8)	28 (56)	
Very satisfied	68 (55.3)	15 (30)	
Overall patient Satisfaction			
High	83 (67.5)	32 (64)	0.660
Low	40 (32.5)	18 (36)	

of nursing education, teamwork, and infrastructure in preventing adverse events.

Family involvement in care planning was significantly higher at CMM, with an average of 46.9 ± 4.9 meetings (63.6%) compared to only 5 ± 1.3 (10.2%) in CMR (p = 0.001). Albarqi [25] emphasized that social and family support substantially improves quality of life and patient satisfaction. Similarly, AbdelAziz et al. [15] noted that limited participation of non-physician roles in decision-making negatively impacts holistic care. The high rate of family participation at CMM demonstrates strong patient- and family-centered care, aligning with global recommendations for collaborative treatment planning.

In terms of staff satisfaction, results across all measured domains were significantly higher in CMM. Leadership indicators were particularly strong, with head nurse performance rated 9.5 ± 0.8 in CMM compared to 8.4 ± 1.5 in CMR (p < 0.001). Similar trends were observed for area manager performance (9.6 ± 0.7 *vs* 8.6 ± 1.2) and director of nursing (9.6 ± 0.7 *vs* 8.7 ± 1.1). These findings align with Albalawi et al. [26], who identified leadership quality as a key determinant of a positive safety culture, and with Aloufi et al. [27], who found that visible, supportive leadership enhances morale and interprofessional collaboration. The high satisfaction rates in CMM underscore the presence of an effective leadership model that fosters accountability and empowerment.

Resource adequacy (9.3 ± 0.8 *vs* 8.0 ± 1.7) and professional growth opportunities (9.3 ± 0.8 *vs* 8.2 ± 1.7) were both significantly higher in CMM. Algethami et al. [28] linked resource availability to improved safety practices, while Almarhabi et al. [29] demonstrated that ongoing education programs enhance staff confidence and retention. The clarity and effectiveness of communication were also superior at CMM (9.4 ± 0.8 *vs.* 8.7 ± 1.4), consistent with findings from Alrshedy et al. [30], who highlighted communication barriers as the most common challenge to MDT collaboration in Saudi hospitals. Workload satisfaction was high (9.3 ± 0.9 *vs.* 8.2 ± 1.7), suggesting that although demands exist, the distribution of tasks is perceived as fair and manageable. Staff appreciation scores (9.3 ± 0.8 *vs.* 7.7 ± 1.8) and Likelihood to Recommend the Hospital (9.3 ± 0.8 *vs.* 8.3 ± 1.6) were also markedly higher, reflecting strong morale and organizational loyalty. Albarqi [25] and Alrshedy et al. [30] demonstrated that recognition and peer support are key drivers of teamwork and retention, and our results fully support these findings. Peer support among staff was rated 9.4 ± 0.8 in CMM compared to 8.3 ± 1.7 in CMR, and overall satisfaction reached 80.6% "high satisfaction" at CMM versus 22% at CMR (p < 0.001). AbdelAziz et al. [15] reported that only 36% of non-oncology physicians regularly participated in MDTs, leading to reduced satisfaction, while our results show that consistent MDT engagement significantly enhances morale and teamwork.

Patient satisfaction results similarly favored CMM across all indicators. Overall quality of care was rated 3.5 ± 0.6 in CMM versus 3.3 ± 0.8 in CMR (p = 0.037), with 61.8% of CMM patients "very satisfied" compared to 46% in CMR. These findings correspond with Albarqi [25] and Alrshedy et al. [30], who found that multidisciplinary collaboration enhances perceived care quality and patient-centeredness. The perception of a safe and secure environment was also higher in CMM (3.6 ± 0.6 *vs.* 3.1 ± 1; p = 0.006), with 62.6% "very satisfied" compared to 46% at CMR. Albalawi et al. [26] and Alrasheeday et al. [31] similarly demonstrated that strong safety culture and clear communication improve patient confidence. Physician availability showed no significant difference between hospitals (3.5 ± 0.6 *vs* 3.4 ± 0.7; p = 0.565), though both were above moderate satisfaction, reflecting an area for potential improvement. Satisfaction with nursing care was higher in CMM (3.5 ± 0.8 *vs* 3.2 ± 0.9; p = 0.063), with 61.8% "very satisfied." Almarhabi et al. [29] noted that insufficient training undermines nurse confidence, and thus our higher scores indicate stronger nursing preparedness and communication. Allied health services also scored significantly better in CMM (3.3 ± 0.8 *vs* 2.8 ± 1; p = 0.001), with 46.3% of patients "very satisfied" compared to

22% in CMR, consistent with AbdelAziz et al. [15], who emphasized interprofessional collaboration as essential for rehabilitation outcomes. Similarly, satisfaction with social work services was higher at CMM (3.5 ± 0.6 *vs.* 3.2 ± 0.7; $p = 0.024$), aligning with AbdelAziz et al. [15], who found that underrepresentation of social workers in MDTs reduces holistic care quality.

Family involvement was one of the strongest differentiators, with CMM scoring 3.6 ± 0.5 versus 2.6 ± 0.9 ($p < 0.001$), and 65% of patients "very satisfied" compared to only 10% in CMR. Albarqi [25] demonstrated that family participation enhances treatment adherence and overall satisfaction, findings mirrored in our study. Cleanliness and comfort were also rated higher in CMM (3.5 ± 0.6 *vs.* 3.1 ± 0.7; $p < 0.001$), with 57.7% "very satisfied," aligning with Algethami et al. [28], who found that environmental quality reflects institutional safety culture. Furthermore, Likelihood to Recommend the Hospital was significantly higher in CMM (3.5 ± 0.7 *vs.* 3.2 ± 0.7; $p = 0.004$), with 55.3% "very satisfied," indicating high patient loyalty. Overall patient satisfaction reached 3.5 ± 0.6 in CMM versus 3.1 ± 0.6 in CMR ($p < 0.001$), with 67.5% high satisfaction compared to 64% in CMR. Korylchuk et al. [21] reported that multidisciplinary coordination significantly enhances satisfaction and safety outcomes, which aligns closely with our results.

This study provides one of the first empirical evaluations of the MDT model in Saudi Arabia's LTC context, offering localized evidence that supports national healthcare transformation objectives. Its comparative, quasi-experimental design and mixed-method data collection strengthen internal validity by integrating both objective clinical indicators and subjective satisfaction metrics from staff, patients, and families. The use of validated instruments such as the FAMCARE and AHRQ Teamwork Climate Surveys enhances reliability. However, several limitations should be acknowledged. The study was limited to two hospitals within a single healthcare organization in Riyadh, which may affect the generalizability of findings to other regions or healthcare systems. Potential response bias from self-reported satisfaction surveys and variations in case complexity between facilities could have influenced the results. Future multicenter, longitudinal research is recommended to further validate MDT effectiveness across diverse institutional and cultural settings and to explore its long-term impact on patient outcomes and system efficiency.

Conclusion

The findings of this comparative study clearly demonstrate that the implementation of a structured MDT model in LTC significantly enhances clinical performance, staff engagement, and patient satisfaction compared with conventional care models. The MDT approach fosters coordinated decision-making, strengthens safety culture, and promotes ethical and family-centered care - core principles of Saudi Arabia's Vision 2030 healthcare transformation. By integrating diverse professional expertise, MDTs improve communication, optimize resource use, and enhance overall quality of life for patients requiring prolonged care. These results underscore the importance of institutionalizing MDT structures across Saudi LTC facilities as a sustainable strategy for improving healthcare quality, workforce morale, and patient-family partnership.

List of Abbreviations

CMM	Care Medical Malaz Hospital
CMR	Care Medical Rawabi
DNR	Do-not-resuscitate
HAPI	Hospital-acquired pressure injuries
IFCs	Indwelling Foley catheters
KPIs	Key performance indicators
LTC	Long-term care
MDTs	Multidisciplinary teams

Conflict of interests

The authors declare that there is no conflict of interest regarding the publication of this article.

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Consent to participate

Written consent was obtained from all the participants.

Ethical approval

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