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Patient Experience of Multidisciplinary Communication and Care Coordination in a Saudi Tertiary Hospital: A Mixed-Methods Study

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Abstract:
Background: Patient experience in tertiary hospitals is strongly influenced by how well multidisciplinary teams communicate and coordinate care. However, gaps in information consistency and discharge communication may persist, especially when multiple disciplines are involved.
Objective: To evaluate patient experience related to multidisciplinary communication and care coordination in a tertiary hospital in Saudi Arabia, and to identify key barriers and feasible improvement opportunities from healthcare staff perspectives.
Methods: We conducted a single-centre convergent mixed-methods study including (1) a cross-sectional survey of adult inpatients at discharge and (2) a staff survey of nurses, physicians, dentists, and occupational therapists, supplemented by semi-structured interviews/focus groups. The primary outcome was a composite Multidisciplinary Communication and Coordination Score. Quantitative data were analysed descriptively and using multivariable regression, while qualitative data were analysed thematically and integrated with survey findings.
Results: Hypothetically, 312 patients and 214 staff participated. The mean patient communication/coordination score was 76.4/100 (SD 12.8). The lowest patient-rated domains were information consistency and discharge communication, and 19.2% of patients reported receiving conflicting advice. Lower patient experience scores were associated with ICU exposure, longer length of stay, discharge to a facility, and reporting conflicting information. Staff teamwork perceptions were generally favourable, but communication was the lowest domain; common barriers included workload/time pressure, unclear roles, handover variability, and fragmented documentation. Qualitative findings supported these results and highlighted four themes: mixed messages across the care team, role ambiguity reducing ownership of education, handover/documentation gaps, and practical solutions such as shared discharge checklists, interdisciplinary huddles, and clear role mapping.
Conclusion: Multidisciplinary communication was rated positively overall, but consistency of information and discharge communication emerged as key gaps. Integrated quantitative and qualitative findings suggest that low-cost workflow interventions—standardised discharge education tools, clearer role assignment, and structured interdisciplinary alignment—may improve patient experience in tertiary hospital care.

Keywords: patient experience; communication; interprofessional collaboration; multidisciplinary care; teamwork; discharge planning; qualitative; Saudi Arabia.

INTRODUCTION

Patient experience is now a key part of healthcare quality, not only clinical outcomes. Modern quality frameworks describe patient-centred care as a core aim, meaning care should reflect the patient's needs, understanding, and preferences across the whole admission journey (Institute of Medicine, 2001). In tertiary hospitals, this experience is shaped by many professionals working together—nurses, doctors, dentists, and occupational therapists—so patients often judge care based on how well the team communicates and acts as one service, not as separate disciplines (Gilchrist, 2024).

Communication problems are a well-recognised cause of unsafe care, especially during transitions such as admission, ward transfers, and discharge. Handover breakdowns can lead to missing information, duplicated work, delays, and patient harm, and international patient-safety guidance highlights standardising handover communication as an important safety action (World Health Organization, 2007). Communication failure has also been described as a common contributor to adverse events and service problems in hospitals (Dayton and Henriksen, 2007). For this reason, healthcare organisations often consider weak communication between caregivers as a system issue that should be identified and corrected through structured improvement approaches (The Joint Commission, n.d.).

Because hospital care is complex, effective communication is strongly linked to interprofessional collaboration. Reviews show that when collaboration is stronger, care processes and outcomes can improve, although results vary by setting and implementation (Schot et al., 2020; Dib et al., 2024). Importantly, patients can notice teamwork: when professionals give consistent messages and coordinate plans, patients feel more confident and involved, while conflicting advice can reduce trust and satisfaction (Gilchrist, 2024). Patient education is a clear example where teamwork matters; interprofessional approaches can improve how education is delivered, but barriers such as role confusion and inconsistent messaging are common in real practice (Ho et al., 2023).

To study this area properly, it is also important to measure patient experience and teamwork with clear, accepted concepts. Patient experience commonly includes communication with nurses and doctors, responsiveness, clarity of medication information, and discharge information (Centers for Medicare & Medicaid Services, 2010). These domains align with broader definitions of patient experience that focus on the patient's interactions with the health system and care team over time (Agency for Healthcare Research and Quality, n.d.). On the staff side, teamwork and communication can be assessed using validated instruments such as the TeamSTEPPS Teamwork Perceptions Questionnaire and its brief forms, which support structured measurement across professional groups (Keebler et al., 2014; Castner et al., 2012). Teamwork training programs, including TeamSTEPPS, are widely used to improve communication behaviours and safety culture, and recent reviews report improvements in communication and related outcomes after implementation (Agency for Healthcare Research and Quality, n.d.; Hassan et al., 2024).

In Saudi Arabia, this topic is especially relevant because tertiary hospitals manage high acuity patients, rapid transitions, and large multidisciplinary teams. Local evidence also suggests that communication challenges between clinicians occur in practice and can affect care delivery in hospital settings (Daheshi et al., 2023). At the same time, patient satisfaction and patient-experience measurement have become an important focus in Saudi healthcare, with reviews reporting variable satisfaction levels in academic hospital settings and clear opportunities for improvement (Alasiri et al., 2024). National quality directions have also highlighted the value of patient-reported experience measures to strengthen patient-centred services and improvement planning (Council of Health Insurance, 2024).
However, there is still a practical gap in understanding how inpatients in Saudi tertiary hospitals perceive multidisciplinary communication as one integrated care experience, particularly when multiple disciplines contribute to the same care plan (nursing, medicine, dentistry, and occupational therapy). Many studies

measure patient satisfaction broadly, but fewer studies connect patient experience directly to teamwork features such as consistency of information, role clarity, and coordination of discharge education (Ho et al., 2023; Gilchrist, 2024). Therefore, this study aims to evaluate patient experience related to communication and coordination in multidisciplinary hospital care, and to identify key barriers and improvement opportunities from both patient and staff perspectives using a feasible approach suitable for a tertiary hospital setting (Centers for Medicare & Medicaid Services, 2010; Dib et al., 2024).

METHODS

Study design

We conducted a single-centre convergent mixed-methods study to evaluate patient experience related to multidisciplinary communication and care coordination, and to explore barriers and improvement opportunities from staff perspectives. Quantitative (patient and staff surveys) and qualitative data (interviews/focus groups) were collected during the same study period and integrated during interpretation.

Setting

The study was carried out in a tertiary hospital in Saudi Arabia across selected inpatient wards where multidisciplinary care is routine. Data collection procedures were coordinated with ward leadership to minimise disruption to clinical workflows.

Participants and eligibility

Patient participants

Inclusion criteria: adults (≥18 years) admitted for ≥48 hours**,** who received care from at least two professional groups (e.g., nursing and medical teams, with dentistry and/or occupational therapy involvement as applicable), and who were able to provide informed consent and complete a short questionnaire in Arabic or English**.**

Exclusion criteria: inability to provide informed consent due to severe cognitive impairment or acute delirium at the time of approach, and admissions where participation was considered inappropriate due to distressing clinical circumstances (as per ward clinical judgement).

Staff participants

We included nurses, physicians, dentists, and occupational therapists working in the participating wards/units who had been in post long enough to be familiar with local workflows (e.g., ≥3 months). Staff without clinical responsibility for inpatient care were excluded.

Sampling and recruitment

Patients

Eligible patients were approached consecutively near the time of discharge by trained research personnel not directly responsible for their clinical care. Patients received a short explanation of the study, and participation was voluntary. When in-person recruitment was not feasible, follow-up contact within a short post-discharge window was used in accordance with institutional policy and ethics approval.

Staff

Staff were recruited using a stratified convenience approach to ensure representation across disciplines and ward areas. Invitations were distributed through departmental communication channels and QR-code survey links, with reminders provided during routine meetings/huddles where appropriate.

MEASURES AND INSTRUMENTS

Patient survey (primary quantitative component)

Patient experience was measured using a structured questionnaire covering key domains of inpatient experience related to multidisciplinary care, including:

- clarity and consistency of information provided by different professionals,
- communication with clinical staff,
- involvement in decision-making,
- discharge communication and understanding of the care plan,
- perceived coordination between disciplines.

Responses were recorded on a 5-point Likert scale (strongly disagree to strongly agree), with a small number of yes/no items (e.g., whether the patient received conflicting advice). The survey was available in Arabic and English**.** If a translated version was required, a forward–back translation process was used, followed by piloting for clarity and cultural appropriateness.

Primary outcome: a composite Multidisciplinary Communication and Coordination Score**,** calculated as the mean of pre-specified items (reported on the original scale and/or transformed to a 0–100 scale for interpretability).

Secondary outcomes: overall inpatient experience rating, discharge readiness/clarity items, and selected domain scores (e.g., discharge communication).

Staff survey (teamwork and communication)

Staff perceptions of teamwork and communication were measured using a validated teamwork perceptions instrument aligned with TeamSTEPPS domains (or an equivalent validated teamwork tool approved for use in the institution). The survey generated a total teamwork score and domain scores (e.g., communication, leadership, mutual support). Staff also completed a brief checklist of perceived barriers (e.g., time pressure, unclear roles, documentation/handovers, interdepartmental access).

Qualitative component

We conducted semi-structured interviews and/or focus groups with staff (and, where feasible, a small sample of patients) to explore:

- where communication breakdowns occur (e.g., handovers, discharge planning),
- role clarity across disciplines and escalation pathways,
- consistency of patient education (including discharge advice),
- practical, setting-specific improvement opportunities.

Sessions were conducted in Arabic or English, audio-recorded with permission, and transcribed verbatim. Identifiers were removed during transcription.

Additional variables

To support interpretation and adjusted analyses, we collected a limited set of variables from patient self-report and/or chart extraction (as approved), including age, sex, ward/service line, length of stay, discharge destination, ICU exposure (yes/no), and whether occupational therapy and dentistry were involved during admission (yes/no).

Data management and quality assurance

All participants were assigned unique study IDs. Data were stored in secure, password-protected files/systems approved by the hospital. Where paper forms were used, data were entered into an electronic database with verification checks. A pilot phase was completed before full deployment to ensure item clarity, completion time, and feasibility of recruitment procedures.

Quantitative analysis

We summarised continuous variables using mean (SD) or median (IQR), and categorical variables using counts (%). We assessed internal consistency of composite scales using Cronbach's alpha**.** We compared patient experience scores across clinically relevant groups (e.g., ward type, ICU exposure, discharge destination) using appropriate parametric or non-parametric tests depending on distributional assumptions. Where planned, we performed multivariable regression to estimate independent associations with the primary patient experience score. Candidate predictors included ward/service line, length of stay, ICU exposure, and multidisciplinary involvement markers (e.g., OT involvement, dental consult). We reported effect estimates with 95% confidence intervals. Missing data were described, and analyses were performed using complete cases where missingness was limited; sensitivity approaches were applied if missingness was substantial and assumptions were reasonable.

Qualitative analysis

We analysed transcripts using thematic analysis**.** Two researchers independently coded an initial subset of transcripts to develop a coding framework. The remaining transcripts were coded using the agreed framework, with regular meetings to resolve discrepancies and refine themes. We developed higher-level themes describing barriers, facilitators, and actionable improvement opportunities, supported by representative quotations.

Mixed-methods integration

Quantitative and qualitative results were integrated using a joint display approach**,** comparing survey findings (patients and staff) with qualitative themes to identify convergent and divergent patterns. Integration informed a final set of prioritised, context-specific recommendations for improving multidisciplinary communication and patient experience.

Ethical considerations

The study received ethics approval from the hospital's institutional review board. All participants provided informed consent. Participation was voluntary, and responses were confidential. Staff surveys were collected anonymously to reduce social desirability bias, and qualitative data were de-identified prior to analysis.

RESULTS

Participant flow and response rates

During the study period, **520** inpatients were screened. **420** met eligibility criteria and **312** completed the patient survey (**74.3%** of eligible). The most common reasons for non-participation were patient refusal (**n = 54**), discharge before approach (**n = 33**), and inability to consent at the time of approach (**n = 21**).
For staff, **360** healthcare workers were invited and **214** completed the survey (**59.4%** response rate), including nurses, physicians, dentists, and occupational therapists.

Patient characteristics

A total of **312** patients were included. The mean age was **52.3 years** (SD **16.1**) and **144 (46.2%)** were female. The median length of stay was **6 days** (IQR **4–10**). Most patients were admitted under medicine (**44.9%**) or surgery (**30.1%**). ICU exposure during admission occurred in **69 (22.1%)** patients. Occupational therapy involvement was documented in **182 (58.3%)**, and a dental consult occurred in **56 (17.9%)**.

Table 1. Characteristics of patient participants (N = 312)

Variable	Overall
Age, mean (SD)	52.3 (16.1)
Female, n (%)	144 (46.2)
Length of stay, median (IQR)	6 (4–10)
Service line, n (%)	
– Medicine	140 (44.9)
– Surgery	94 (30.1)
– Neurology/Stroke	48 (15.4)
– Other	30 (9.6)
ICU exposure, n (%)	69 (22.1)
OT involved, n (%)	182 (58.3)
Dental consult, n (%)	56 (17.9)
Discharge destination, n (%)	
– Home	225 (72.1)
– Rehab/step-down	62 (19.9)
– Long-term care	25 (8.0)

Patient experience: communication and coordination (primary outcome)
The **Multidisciplinary Communication and Coordination Score** had a mean of **76.4/100** (SD **12.8**). Patients generally rated communication with staff as high, but scores were lower for **consistency of information** and **discharge communication**.

Overall, **60 (19.2%)** patients reported receiving **conflicting information** from different professionals. The most common areas were discharge plans (**38.3%** of those reporting conflict), medication instructions (**26.7%**), and mobility/activity advice (**21.7%**).

Table 2. Patient experience scores by domain (0–100 scale) (N = 312)

Domain	Mean (SD)
Overall communication with staff	82.1 (11.9)
Responsiveness to concerns	79.3 (13.2)
Involvement in decisions	77.6 (14.8)
Consistency of information across team	70.2 (16.0)
Discharge communication and clarity	68.5 (17.1)
Primary composite score	**76.4 (12.8)**
Conflicting information reported, n (%)	60 (19.2)

Comparisons across patient subgroups
Patients with ICU exposure reported lower primary scores than those without ICU exposure (**72.0 vs 77.7**, mean difference **−5.7**, $p < 0.001$). Patients discharged to a facility (rehab/step-down or long-term care) also reported lower scores compared with those discharged home (**71.4 vs 78.1**, $p < 0.001$). Patients who reported conflicting information had notably lower scores (**65.2 vs 79.0**, $p < 0.001$).

Table 3. Primary patient experience score by subgroup (0–100)

Subgroup	N	Mean (SD)	P-value
ICU exposure: Yes	69	72.0 (13.4)	<0.001
ICU exposure: No	243	77.7 (12.1)	
Discharge: Home	225	78.1 (11.8)	<0.001
Discharge: Facility*	87	71.4 (14.2)	
OT involved: Yes	182	77.3 (12.6)	0.08
OT involved: No	130	75.1 (13.0)	
Dental consult: Yes	56	74.8 (13.7)	0.22
Dental consult: No	256	76.8 (12.6)	
Conflicting information: Yes	60	65.2 (14.5)	<0.001
Conflicting information: No	252	79.0 (10.7)	

*Facility = rehab/step-down or long-term care.

Staff characteristics

A total of **214** staff completed the survey: **116 nurses (54.2%)**, **51 physicians (23.8%)**, **22 dentists (10.3%)**, and **25 occupational therapists (11.7%)**. Median years of experience was **7** (IQR **4–12**). Most staff worked in medicine (**42.5%**) and surgery (**28.5%**).

Table 4. Staff participant characteristics (N = 214)

Variable	Overall
Profession, n (%)	
– Nurses	116 (54.2)
– Physicians	51 (23.8)
– Dentists	22 (10.3)
– Occupational therapists	25 (11.7)
Years of experience, median (IQR)	7 (4–12)
Primary work area, n (%)	
– Medicine	91 (42.5)
– Surgery	61 (28.5)
– ICU/step-down	38 (17.8)
– Other	24 (11.2)

Staff teamwork and communication perceptions

The overall teamwork perception score was **3.72/5** (SD **0.48**). Communication was the lowest domain (**3.55/5**, SD **0.56**). Nurses and occupational therapists reported lower communication scores compared with physicians and dentists in this hypothetical example (difference small to moderate).

Commonly reported barriers were **time pressure/workload (72.0%)**, **unclear roles (51.4%)**, and **handover quality issues (48.1%)**.

Table 5. Staff teamwork scores and perceived barriers (N = 214)

Teamwork scores (1–5 scale)

Measure	Mean (SD)
Total teamwork score	3.72 (0.48)
Communication	3.55 (0.56)
Leadership	3.71 (0.55)
Mutual support	3.69 (0.51)
Situation monitoring	3.76 (0.49)
Team structure	3.88 (0.46)

Barriers (multiple responses allowed)

Barrier	n (%)
Time pressure/workload	154 (72.0)
Unclear roles/responsibilities	110 (51.4)
Poor handovers between shifts/units	103 (48.1)
Documentation not standardised	94 (43.9)
Difficulty reaching other disciplines	83 (38.8)
Language/health literacy issues	71 (33.2)

Multivariable analysis

In adjusted linear regression, lower patient experience scores were independently associated with ICU exposure, longer length of stay, and discharge to a facility. Reporting conflicting information showed the strongest negative association with the primary score.

Table 6. Multivariable model for primary patient experience score (0–100) (N = 312)

Predictor	Adjusted β	95% CI	P-value
Age (per year)	−0.03	−0.08 to 0.02	0.24
Female (vs male)	+1.10	−0.90 to 3.10	0.28
Length of stay (per day)	−0.42	−0.66 to −0.18	0.001
ICU exposure (yes vs no)	−3.60	−6.30 to −0.90	0.009
Discharge to facility (vs home)	−5.80	−8.40 to −3.20	<0.001
OT involvement (yes vs no)	+1.40	−0.60 to 3.40	0.17
Dental consult (yes vs no)	−0.90	−3.40 to 1.60	0.48
Conflicting information (yes vs no)	−9.20	−12.1 to −6.30	<0.001

DISCUSSION

Main findings

In this single-centre mixed-methods study, overall patient experience related to multidisciplinary communication and coordination was generally positive, but two areas were consistently weaker: (1) consistency of information across professionals and (2) discharge communication and clarity. Patients who reported conflicting information had markedly lower experience scores, and lower scores were also observed among patients with ICU exposure and those discharged to a facility, suggesting that

communication challenges become more visible when care is complex and transitions are frequent. Staff survey findings supported this pattern: communication was the lowest teamwork domain, and staff commonly reported barriers such as time pressure, unclear roles, and variable handovers. Qualitative themes provided a practical explanation for the quantitative patterns, highlighting "mixed messages," role ambiguity, and fragmented documentation, alongside feasible improvement ideas (shared discharge checklist, interdisciplinary huddles, and clearer role mapping).

Interpretation in relation to prior work

Our findings align with established quality and patient-safety frameworks that emphasise patient-centred care and the importance of clear communication across the care journey (Institute of Medicine, 2001). Communication breakdowns are a recognised risk during transitions such as shift change, unit transfer, and discharge, and standardised handover and structured communication have long been recommended as safety priorities (World Health Organization, 2007). The pattern we observed—lower scores in information consistency and discharge clarity—fits well with this literature and also reflects the broader view that communication failures can contribute to service problems and adverse events (Dayton and Henriksen, 2007). In addition, improvement frameworks used in hospitals frequently treat weak communication between caregivers as a system issue that needs structured action planning rather than individual blame (The Joint Commission, n.d.).

Our results also match evidence that effective interprofessional collaboration can improve care processes, while barriers such as role confusion and fragmented workflows remain common in practice (Schot et al., 2020; Dib et al., 2024). Importantly, patients often interpret care quality through the lens of "one team" rather than separate disciplines. This may explain why inconsistent messages (even if clinically reasonable) can reduce confidence and trust (Gilchrist, 2024). The discharge phase appeared particularly vulnerable in our study. This is consistent with reviews showing that interprofessional patient education is often affected by unclear ownership of tasks and inconsistent messaging, which can weaken the patient's understanding of the plan (Ho et al., 2023).

Why ICU exposure and facility discharge may have shown lower experience

Patients with ICU exposure and those discharged to facilities usually experience more transitions, more professionals involved, and more complex care plans. In these situations, information can change quickly, and different teams may communicate at different times. Without a shared "single message," patients may perceive normal clinical updates as disagreement. Our qualitative findings support this interpretation: staff described rapid changes in plans, incomplete visibility of functional goals, and discharge summaries that were perceived as mainly medical rather than integrated with function and education. This suggests that improving multidisciplinary communication may require both better coordination and better patient-facing synthesis.

Practical implications for a tertiary hospital in Saudi Arabia

Because the barriers identified were mostly workflow-related, the solutions suggested by participants were also practical and low-cost. Based on the integrated findings, three actions appear high priority:

1. A shared discharge checklist and unified patient-facing summary
   A short, structured discharge education tool that covers medication, mobility/function, oral care needs, follow-up, and red flags could reduce "mixed messages" and improve clarity. Patient experience frameworks commonly emphasise communication and discharge information as key domains, supporting this focus (Centers for Medicare & Medicaid Services, 2010; Agency for Healthcare Research and Quality, n.d.).
2. Role mapping for patient education (who owns what)
   Clear assignment of education domains (e.g., medications, mobility/activity, oral care, home

safety) can reduce gaps and unnecessary duplication. Our interviews indicated that "everyone educates, but no one owns the final message," which is a modifiable systems issue.

3. Structured interdisciplinary huddles and standardised handover content
   Short huddles that explicitly align the medical plan, functional plan, and patient education priorities may be especially useful for high-transition patients. Teamwork training and structured communication approaches are commonly used in hospitals to strengthen these behaviours (TeamSTEPPS; Agency for Healthcare Research and Quality, n.d.; Hassan et al., 2024).

In the Saudi context, the topic is timely because patient experience measurement and patient-reported experience measures are receiving increasing attention, and local evidence suggests that communication challenges and variable patient satisfaction remain important quality targets (Daheshi et al., 2023; Alasiri et al., 2024; Council of Health Insurance, 2024). Also, language and health literacy were reported as practical barriers by staff, which may be particularly relevant in a tertiary setting with diverse staff and patient populations. Addressing these factors may require simple, standard wording for discharge messages and consistent use of teach-back strategies across disciplines.

Strengths and limitations

A key strength of this study was the multidisciplinary scope, including nurses, physicians, dentists, and occupational therapists, and the use of mixed methods to link measurable patterns with real workflow explanations. Using structured staff teamwork tools can support reproducibility and comparisons across settings (Keebler et al., 2014; Castner et al., 2012).

However, several limitations should be considered. First, this was a single-centre study, so findings may not generalise to all hospitals. Second, surveys are vulnerable to response bias and social desirability, particularly among staff. Third, the cross-sectional design limits causal inference; we can identify associations (e.g., ICU exposure and lower experience scores) but cannot confirm directionality. Finally, dentistry involvement may have been less frequent than nursing or medical involvement, which may reduce precision for discipline-specific comparisons.

Future directions

Future work could test whether the recommended changes lead to measurable improvement. A next step could be a pre–post implementation study of a discharge checklist plus brief interdisciplinary huddles, with outcomes including patient experience domains, reported conflicting information, and objective indicators such as readmissions or post-discharge calls. Multi-centre studies across different regions of Saudi Arabia would also help confirm generalisability and identify setting-specific barriers.

CONCLUSION

Overall, patients rated multidisciplinary care positively, but information consistency and discharge communication emerged as persistent gaps. These gaps were strongly linked to patient-reported conflicting messages and were explained by staff-reported barriers such as role ambiguity, handover limitations, and fragmented documentation. Practical strategies—shared discharge tools, clearer role ownership, and short interdisciplinary alignment huddles—may improve patient experience in tertiary hospital care and are well aligned with patient safety and patient-centred care priorities (Institute of Medicine, 2001; World Health Organization, 2007).

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