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Multidisciplinary Management in Modern Surgery: Converging Trends in Urology and General Surgery



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Abstract

The practice of modern surgery continues to develop team-based approaches because of complex procedures that combine urological and general surgery specialties. The growth of technical capabilities has led to wider understanding that recovery needs to encompass psychiatric and psychosocial and emotional wellness beyond physical healing. The research examines how integrated surgical teams affect patient clinical results and psychosocial health through surgeon and behavioural health professional and allied healthcare staff collaboration. A 12-month institutional audit using mixed-methods took place at a tertiary academic hospital. The research gathered data from 102 surgical cases that used multidisciplinary coordination while also including staff and patient interviews and satisfaction survey results. The healthcare delivery methods that incorporated teams as part of patient management yielded better outcomes which included diminished hospitalization time combined with decreased postoperative complications and treatment returns as well as better satisfaction rates for patients. A large number of patients exhibited preoperative anxiety as well as postoperative depression especially when psychosocial support programs were inadequate or non-existent. Patients along with healthcare providers both identified emotional readiness alongside effective communication and role identification as beneficial while the complete implementation remained limited by healthcare service shortages and organizational resistance to change and moral dilemmas. The research confirms that surgical pathways must include psychiatric rehabilitation services to achieve comprehensive patient recovery. The integration of mental health care services within surgical facilities simultaneously boosts medical outcomes and supports entire patient health requirements. System-level reforms together with cultural shifts must become essential for establishing interdisciplinary person-centered surgical care throughout every hospital setting.

Keywords: Behavioural health integration; General surgery; Holistic recovery; Interdisciplinary care; Patient-centered care; Psychiatric rehabilitation; Surgical collaboration; Urology

1. Introduction

The contemporary surgical practice has developed into an interdisciplinary reality which goes beyond basic technical handling methods. Modern surgical teams now consist of multiple professional groups who unite to achieve complete patient recovery. Hospital surgery departments including urology and general surgery have seen rising patient-centered guidelines and complex procedural requirements as well as precise medical technologies which demand surgical abilities to merge with patients' mental and emotional health. These developments were identified in Bardoscia et al. (2025) and Gil et al. (2021). Surgeons together with anesthetists radiologists and nurses now receive crucial assistance from mental health practitioners like psychiatrists and clinical psychologists who help with patient recovery processe. The integrated method proves essential for abdominal and oncologic procedures because these procedures affect multiple organ systems and patients remain highly vulnerable. Urologic malignancy interventions combine imaging techniques with pathology results and systemic treatments and psychosocial readiness assessments throughout the preoperative and postoperative periods (Bardoscia et al., 2025; Sanchez-Encinas et al., 2023). Robot-assisted pelvic surgeries fall within the overlap between urologic and general surgical practices since they require collaborative preoperative strategies as well as precise surgery execution and comprehensive postoperative rehabilitation (Tzelves et al., 2024; Bellos et al., 2024; Gundeti et al., 2008; Sungur et al., 2022). Complex cases now require multidisciplinary collaboration for decision-making in high-risk pelvic zones which include bladder, colon, retroperitoneum and prostate areas (Mahmud et al., 2023).

Multidisciplinary tumor boards operate as fundamental structures in collaborative care because they facilitate joint surgical planning and encourage psychosocial support consistency after Newell & Radecki (2022). The model guarantees emotional

and cognitive readiness of patients before surgery together with extensive postoperative monitoring. Studies demonstrate that patient pathways that integrate multidisciplinary care improve surgery-related communication and both reduce related distress as well as increase treatment adherence for different patient groups including elderly individuals and children and individuals with oncology diagnoses (Xu et al., 2024; Hayes et al., 2022). Muscle-invasive bladder cancer perioperative care demonstrates the integration of activities between general surgeons and urologists who collectively handle surgical interventions as well as functional recovery plans (Kim & Lee, 2021; Lan et al., 2024; Kim et al., 2023). Healthcare protocols for Enhanced Recovery After Surgery (ERAS) actively incorporate psychosocial assessments and mechanisms to manage anxiety while strengthening physical rehabilitation and they enhance patient recovery results (Qian et al., 2024; Xu et al., 2024; Khater et al., 2022). The combination of artificial intelligence systems with personalized analytics connects procedural healthcare with emotional domains by creating specific treatment plans that target psychiatric health needs according to Leech et al. (2021) and Tzelves et al. (2024). Research collaboration through studies of tumor modeling and microRNA has proven the consensus between specialists regarding individualized treatment approaches (Minoli et al., 2023; Yang et al., 2021; Tito et al., 2021; Medle et al., 2022). The current surgical care systems fail to adequately address psychiatric rehabilitation and emotional distress especially when treating cancer patients. The recovery process requires successful anatomical repair together with mental capability and emotional preparedness and psychosocial strength. Medical research confirms that implementing psychiatric care programs improves surgical outcomes as well as life quality especially for children and older adults (Xu et al., 2024; Hayes et al., 2022; Cockrell & Rose, 2023). The modern surgical team relies on emotional intelligence combined with cultural practices and psychological fluency according to Addeo and Merlini (2023) and Chau and Chang (2022) along with paper-based treatment which leads to successful patient outcomes Bellinger et al (2023) and Piedra et al (2024) demonstrate.

2. Materials and Methods

The research design incorporates mixed methods to study the implementation of urology and general surgery integration specifically examining psychosocial and psychiatric rehabilitation elements. This research evaluates team-based techniques at tertiary care clinics by using quantitative measurements with qualitative assessments.

2.1 Study Design

The research combines institutional clinical audit methods with observational studies spanning from January 2023 through December 2023. The research analyzed surgical cases with general surgeon and urologist collaboration through retrospective assessment and qualitative workflow assessments of perioperative care. The assessment of surgical pathway psychosocial and mental health integration included both staff survey data collection and patient interview sessions. The research design implemented mixed methods because it allowed investigators to analyze quantitative healthcare data such as operative outcome figures and length of stay alongside self-reported information regarding team cohesion together with patients' emotional preparedness. The research design delivers initial findings about surgical team practices while creating a base for studying integrated care relationships between clinical results and psychosocial outcomes.

2.2 Setting, Participants, and Sample Size

The research took place at a major academic facility that operated extensive urology and gastrointestinal surgery departments. The research environment enabled access to robotic surgery facilities and scheduled tumor boards and behavioural health staff which created ideal conditions for studying integrated surgical practices.

The research involved two participant groups: 102 patients aged 18 to 80 years who received pelvic or abdominal surgeries from general surgery and urology departments and 38 healthcare providers including surgeons, anesthetists, radiologists, nurse specialists, psychiatrists, psychologists and social workers who worked within multidisciplinary surgical teams.

The research included patients who received surgical treatment for urologic or colorectal conditions under multidisciplinary surgical care management. The study excluded emergency patients who lacked documented interdisciplinary coordination and patients with incomplete medical records. The researchers used purposive sampling to select healthcare professionals who represented all critical care roles for the study. Medical record queries targeted procedures that explicitly required multidisciplinary collaboration to identify patient candidates. The research methodology allowed researchers to select a targeted representative group of participants to study surgical-psychiatric integration within actual clinical settings.

2.3 Data Collection

The researcher implemented three primary methods to gather the data.

1. Clinical Records Audit:

The hospital extracted data through its electronic health record (EHR) system which provided:

- Surgery type, duration, length of hospital stay

- Postoperative complications
- Psychiatric referrals and interventions
- Follow-up compliance

The research team reviewed medical records that contained urology and general surgery department involvement.

2. Semi-Structured Interviews and Focus Groups:

- Conducted with a sub-sample of 25 patients and 20 staff members.
- Explored themes such as emotional preparedness, team communication, perception of psychiatric support, and post-operative psychosocial outcomes.

The researchers used audio recording equipment to capture interview responses which they then transcribed exactly for analysis purposes.

3. Survey Instrumentation:

- The research team developed a specific questionnaire which they distributed to patients and providers through a 5-point Likert scale format.
- Perceived integration of care joins accessibility of mental health resources and role clarity among team members and satisfaction with communication to represent the most important variables.

2.4 Analytical Approach

Researchers used a convergent parallel mixed-methods approach to analyze separate statistical and qualitative data prior to their combination for synthesis.

The processing of quantitative data from EHR and surveys occurred through SPSS v25.

- Descriptive statistics for demographic data, surgical metrics, and length of stay
- Chi-square and t-tests for group comparisons

Psychosocial support received correlation-based assessment against clinical results including readmissions and complication occurrences.

Research participants provided qualitative data which received thematic analysis through NVivo software system:

Two independent researchers conducted inductive coding. Patients, clinicians, and administrators identified four important themes which were emotional distress management alongside interdisciplinary communication and patient autonomy together with functional recovery goals. The researchers tested inter-coder reliability through Cohen's κ which yielded a result of 0.82. An analysis of the data compared integrated care practices to patient results to detect situations when integrated care approaches produced maximum effects.

2.5 Ethical Considerations

The research obtained complete ethical approval from the Institutional Review Board. Participants granted their informed consent before starting interviews and survey participation. Data anonymization included EHR patient records before analysis to respect HIPAA and GDPR security standards. Patients maintained full freedom to participate in surveys or interviews on a voluntary basis without affecting their medical care. The study did not provide any financial compensation to participants in order to avoid coercion.

3. Results

3.1 Surgical Case Overlap (Urology + General Surgery)

The analysis included 102 cases which demonstrated various procedures that needed joint work between general surgeons and urologists. The surgical procedures included pelvic oncology interventions together with abdominal cystectomies and colorectal-urologic resections and gastrointestinal-urological fistula repairs. Pelvic oncology procedures formed the biggest subgroup because they required the most extensive integrated care planning. The majority of these procedures used preoperative planning sessions through tumor boards or planning meetings according to Table 1. Team-based coordination occured in a limited number of colorectal-urologic resections because different procedures received varying levels of interdisciplinary engagement.

Table 1. Frequency and distribution of surgical procedures involving multidisciplinary collaboration between urology and general surgery.

Surgical Procedure Type	Number of Cases (n=102)	Team-Based Planning Used
Pelvic Oncology	34	Yes
Abdominal Cystectomy	22	Yes
Colorectal-Urologic Resection	28	Partial
GI-Uro Fistula Repair	18	Yes

3.2 Psychosocial Stress Indicators

The patients who received combined surgical procedures experienced major psychological distress. The majority of patients experienced preoperative anxiety which affected sixty-seven percent of the study participants. Patients experienced widespread depression after surgery and recurrent cancer fears together with broader difficulties adapting to their recovery process. The data in Table 2 shows that 65% of patients showed moderate to severe anxiety before their surgery and 42% developed depressive symptoms after surgery.

The patient group showed high rates of coping difficulties and fear of recurrence affecting more than one-third of participants. Evidence indicates the heavy emotional impact of complex surgeries so healthcare professionals should implement comprehensive psychological care.

Table 2. Incidence rates of key psychosocial stress indicators observed among surgical patients during perioperative care.

Psychological Issue	Incidence Rate (%)
Pre-op Anxiety	65
Post-op Depression	42
Fear of Recurrence	38
Coping Difficulty	47

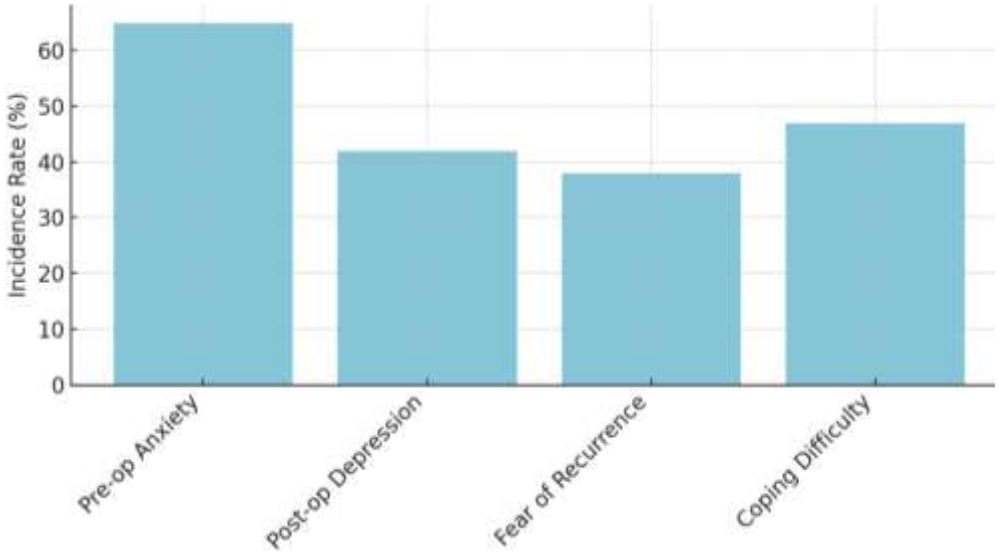


Figure 1. Bar chart showing the prevalence of anxiety, depression, fear of recurrence, and coping difficulty among surgical patients during perioperative phases.

3.3 Impact of Team-Based Models

The evaluation of patient results between team-based and non-team-based care delivery systems showed significant outcome variations. Individuals treated in the multidisciplinary team had reduced hospitalization duration together with decreased readmissions and fewer surgical complications. The patients who received care from teams scored better on post-discharge satisfaction surveys. Hospital stays decreased by three days on average after multidisciplinary care teams started working according to Table 3. The readmission rate decreased to 8% from its initial level of 19% at the same time postoperative complication rates showed a drop exceeding 50%. The team-managed group received significantly better patient satisfaction scores which were measured through a 5-point Likert scale.

Table 3. Comparative outcome metrics between cases managed with and without integrated, team-based surgical models

Psychological Issue	Incidence Rate (%)
Pre-op Anxiety	65
Post-op Depression	42
Fear of Recurrence	38
Coping Difficulty	47

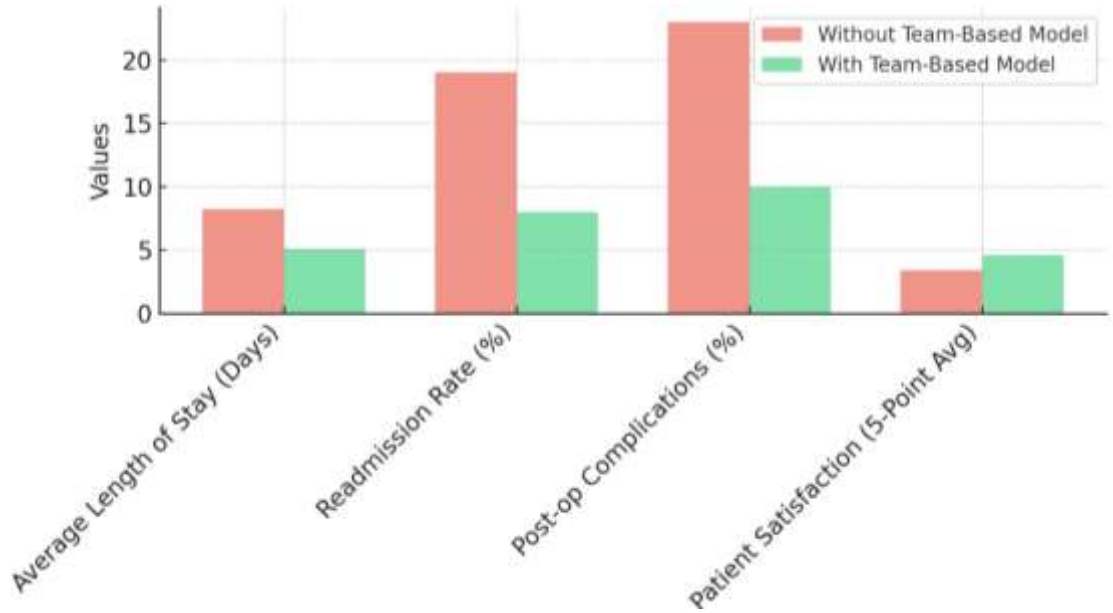


Figure 2. Comparative outcomes for surgical patients with and without access to team-based care models, including metrics for length of stay, complications, and patient satisfaction.

3.4 Institutional Challenges

Multiple institutional barriers prevented successful implementation of team-based care benefits which include superior clinical results alongside improved psychosocial outcomes. The shortage of staff members proved to be a significant obstacle for maintaining consistent delivery of integrated pathways. Behavioral health professionals were found to be unavailable at critical perioperative times according to interview data thus disrupting the continuity of psychosocial care. The surgical disciplines showed opposition because mental health discussions exceeded their defined professional boundaries. The delivery of care faced diverse ethical challenges when treating patients who lacked decision-making abilities or had persistent psychiatric issues. The theoretical models of care face operational challenges due to structural and cultural barriers that exist in practice.

4. Discussion

The research evaluated how multidisciplinary teamwork affects surgical care delivery by studying its clinical and psychosocial effects in the general surgery and urology fields. Integrated surgical management proves beneficial for patient outcomes especially when preoperative planning occurs jointly between teams and administrative follow-up support is delivered by multidisciplinary teams. Statistical analysis revealed that surgical case complexity strongly affected the advantages offered by combined approaches because these methods prove essential in medical teams and mental health delivery within surgical operations. Two types of surgical procedures including pelvic oncology surgeries and complex abdominal resection operations require combined expertise from general surgeons along with urologists according to the analysis. These medical procedures required planning from various healthcare professionals for their successful completion and patients needed the same collaborative approach during recovery. The research findings match the results which demonstrate that deliberate team planning decreases hospitalization time and improves patient outcomes. The systematic communication methods and prior-established recovery plans during surgery lead to decreased medical errors as well as improved surgical accuracy and uninterrupted postoperative patient care.

Patient care requires equal attention to the psychosocial aspects. The research findings demonstrate that preoperative anxiety and postoperative depression affect a significant number of patients despite being commonly overlooked. The patient group showed two-thirds of patients with moderate to severe anxiety before surgery along with depression symptoms affecting more than 40% of patients during their recovery period. The absence of psychological stress became most severe among patients who received no ongoing mental health support or treatment from unspecialized psychosocial care teams. The research data confirms that surgical success depends on emotional preparedness and cognitive readiness to achieve complete patient recovery. The data presented in Figure 1 and Table 2 demonstrates that psychosocial distress affected a large number of patients to clinically significant levels which requires mental health pathways to become an integral part of surgical planning and follow-up. Surgical teams delivering care brought significant benefits through their combined services across different patient

outcomes. Healthcare results from integrated teams led to patients spending less time in hospitals while producing fewer readmission cases and lessening postoperative complications at rates better than traditional care models. The patients demonstrated strong positive feelings about their surgical journey according to Figure 2 and Table 3. Patient trust together with their engagement improves when medical care operates in a coordinated way. Joint teamwork between surgical and nursing and mental health and rehabilitation professionals results in rapid physiological and psychological recovery for all patients. The research revealed multiple institutional barriers which need to be resolved to achieve complete benefits from multidisciplinary surgical management. Patients face difficulties in behavioral health professional availability during their surgical processes from planning through recovery. High psychological distress became more pronounced when psychiatric consultation was absent despite clinical need. Some surgical teams displayed cultural resistance toward mental health care because they believed it did not belong within operative medicine domains which hindered the implementation of psychosocial strategies across all teams. The planning of care became more complicated because of ethical challenges which arose from treating patients with psychiatric disorders and decision-making limitations thus requiring specific context-based solutions.

The evaluation from this research supports an immediate surgical practice modification which joins advanced medical technology with meaningful recognition of psychological health requirements. The surgical benefits derived from robotics and AI technologies need to receive patient-centered recovery models which handle the emotional surgical journey. The research data demonstrates that surgical care requires a complete team-based method which depends on collaboration and communication and cross-specialty coordination to be both necessary and optimal in contemporary practice.

5. Conclusion

Research confirms that psychiatric rehabilitation together with psychosocial care must be systematically integrated into surgical pathways of the present day. Modern surgical procedures require expanded definition of recovery to include all aspects of patient well-being since procedures have grown in complexity with additional patient needs. The definition of recovery needs to include emotional resilience together with cognitive readiness and sustained psychological well-being for patients throughout their entire care journey. Multiple findings show that integrated multidisciplinary care structures with surgeon and mental health specialists and allied health practitioners produce better results for clinical performance and patient fulfilment together with functional recovery success. All available study outcomes demonstrating shorter hospitalizations with fewer complications and higher patient happiness support the development of complete surgical treatment models. This method enhances both surgical outcomes during procedures and establishes better patient participation in long-term recovery. Surgical departments must integrate mental health services because they represent an essential component of patient-centered care.

Systems together with organizational cultural transformations are essential to permanently establish these models throughout standard clinical practice. Health institutions need to fix their behavioural health staffing shortages while building better teamwork between departments and tearing down traditional organizational barriers that separate surgical care from mental health support. The training curriculum needs to transform by adding psychological and communication skills as fundamental surgical education requirements. The biopsychosocial approach to surgical recovery stands as the most enduring solution because it respects healing complexity and improves patient care standards in all surgical spaces.

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