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Review Article

From Bed Rest to Early Mobilization: Nursing Challenges in Older Adults After Major Abdominal Surgery: A Critical Narrative Review

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ABSTRACT

Context: The growing population of older adults undergoing major abdominal surgery presents a significant challenge to postoperative care. Although evidence increasingly supports a shift from prolonged bed rest to early mobilization, implementation remains challenging in routine nursing practice.

Objectives: This critical narrative review aimed to analyze the transition from strict bed rest to active mobilization and identify nursing challenges in implementing early mobilization protocols in older adults following major abdominal surgery.

Evidence Acquisition: A critical narrative review was conducted following established principles for narrative reviews. PubMed, Scopus, Web of Science, and CINAHL were searched for studies published between January 2011 and December 2025 using terms related to early mobilization, older adults, major abdominal surgery, and nursing challenges. Of the 110 records screened at the title and abstract levels, 25 studies were included in the final synthesis. An iterative, concept-driven approach was used to identify recurring themes across quantitative, qualitative, and practice-based evidence. No formal quality appraisal was undertaken.

Results: Nursing challenges clustered into four domains: (1) physiological challenges, including frailty and lower adherence to mobilization protocols in emergency surgery; (2) psychological and cognitive challenges, including fear of falling and vulnerability to delirium; (3) structural challenges, particularly competition between mobilization and essential nursing tasks amid inadequate staffing; and (4) organizational challenges, including inconsistent protocols and implicit age bias. Nurse-led structured programs, such as MILES and the modified Hospital Elder Life Program (mHELP), showed potential benefits in selected outcomes. MILES supported individualized care and favorable recovery-related outcomes, while mHELP was associated with reduced delirium incidence. However, evidence remains limited to specific clinical settings.

Conclusions: Early mobilization after major abdominal surgery in older adults is shaped by patient vulnerability, clinical decision-making, team organization, and institutional culture. Therefore, nursing practice should move beyond simply encouraging activity toward individualized assessment, shared mobility goals, coordinated interdisciplinary care, and culturally responsive support.

Keywords: Aged, Abdomen, Frailty, Early ambulation, Enhanced recovery after surgery

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1. Introduction

The growing number of older adults undergoing major abdominal surgery presents an increasing challenge for healthcare systems, particularly in postoperative care. These patients are at increased risk of adverse outcomes, including prolonged hospitalization, functional decline, and loss of independence (1,2). Frailty, rather than chronological age alone, is a stronger predictor of these outcomes and should therefore inform perioperative decision-making (1). Major abdominal surgery is common among older adults, with more than half of such procedures performed in patients aged 65 years or older (3). As the global population ages, optimizing perioperative care for this vulnerable population has become increasingly important (1). Postoperative mobility is a critical determinant of recovery. Historically, prolonged bed rest was prescribed to protect surgical wounds and reduce pain; however, evidence accumulated over the past two decades has shown that immobility is independently harmful, increasing the risks of atelectasis, pneumonia, venous thromboembolism, sarcopenia, and delayed gastrointestinal recovery (4,5). Evidence from inpatient populations indicates that early mobilization is associated with shorter hospital stays and improved functional outcomes (4). Accordingly, early mobilization, defined as active out-of-bed activity initiated within 24–48 hours after surgery, has become a key component of Enhanced Recovery After Surgery (ERAS) pathways and is theorized to attenuate the consequences of surgical stress and facilitate recovery (6,7). Translating this evidence into practice is particularly challenging in older adults, whose reduced cardiopulmonary reserve and blunted physiological stress responses may limit mobility (8). In this critical narrative review, major abdominal surgery encompasses elective and emergency procedures performed through laparotomy or laparoscopy, including colorectal resection, gastrectomy, pancreaticoduodenectomy, and complex ventral hernia repair. This review focuses on procedures requiring inpatient postoperative care in which early mobilization is clinically relevant. The 2024 EAES/SAGES international consensus strongly supports ERAS and minimally invasive approaches in older adults and emphasizes that chronological age alone should not preclude active mobilization (9).

Nurses play a central role in translating these recommendations into bedside practice by assessing readiness, coordinating multidisciplinary care, managing pain and hemodynamic stability, and educating patients and families. However, implementation may be hindered by inadequate staffing, fear of falls, and the absence of standardized protocols (10). Similarly, Svensson-Raskh et al. reported an internal conflict among nurses between recognizing the importance of mobilization and uncertainty about whether it was safe to initiate activity at an early stage (10). For this review, early mobilization is operationally defined as active out-of-bed activity, including sitting at the bedside, standing, transferring to a chair, and ambulating, initiated within 24–48 hours postoperatively (6,11). This differs from prehabilitation, which comprises preoperative interventions, such as exercise, nutritional support, and psychological preparation to increase functional reserve (12,13), and from rehabilitation, the broader process of restoring functional capacity following hospitalization (13).

This critical narrative review aimed to analyze the paradigm shift from strict bed rest toward active rehabilitation in older adults after major abdominal surgery and identify nursing challenges encountered during this transition. The guiding question was: What barriers do medical-surgical nurses face in implementing early mobilization protocols for older adults, and what evidence-based solutions can address these challenges.

2. Evidence Acquisition

2.1. Protocol and Registration

This critical narrative review followed established principles for narrative literature reviews (14). A structured approach was used to search, select, and organize the literature while retaining the flexibility required to interpret heterogeneous evidence. A critical narrative approach was considered appropriate because the available literature included quantitative and qualitative studies, systematic reviews, quality-improvement reports, clinical guidelines, and consensus statements. This review aimed to examine these findings in relation to nursing practice and identify key challenges and potential approaches to implementing early mobilization. This review was not prospectively registered because it was designed as a critical narrative review rather than a systematic review or meta-analysis requiring protocol registration.

2.2. Search Methods

A focused search was conducted in PubMed, Scopus, Web of Science, and CINAHL between October and December 2025. The search included English-language publications from January 2011 to December 2025. The PubMed strategy combined MeSH and title/abstract terms related to early mobilization, older adults, major abdominal surgery, and nursing: ("early mobilization"[Title/Abstract] OR

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"early ambulation"[Title/Abstract] OR "enhanced recovery after surgery"[MeSH]) AND ("older adults"[Title/Abstract] OR "elderly"[Title/Abstract] OR "geriatric"[Title/Abstract] OR "aged"[MeSH]) AND ("major abdominal surgery"[Title/Abstract] OR "laparotomy"[Title/Abstract] OR "colorectal surgery" [Title/Abstract]) AND ("nursing"[Title/Abstract] OR "nursing care" [Title/Abstract] OR "nurse-led" [Title/Abstract]). This strategy was adapted to the indexing terms of the other databases. Additional terms, including "ERAS," "geriatric surgery," "nursing challenges," and "frailty," were used where appropriate. Reference lists and citation tracking were also examined to identify relevant studies not captured by the database search. Publications appearing after December 2025 were consulted only for contextual interpretation during manuscript preparation and were not included in the formal synthesis.

2.3. Eligibility Criteria

Studies were eligible if they included adults aged ≥65 years undergoing major abdominal surgery and addressed early mobilization, early ambulation, ERAS, postoperative rehabilitation, nursing roles, barriers, facilitators, or relevant interventions. Major abdominal surgery was defined as elective or emergency open or laparoscopic procedures requiring inpatient postoperative care, including colorectal resection, gastrectomy, pancreaticoduodenectomy, and other complex abdominal procedures. Original quantitative and qualitative studies, systematic reviews, clinical guidelines, consensus statements, and relevant quality-improvement reports were considered. Studies focusing exclusively on younger populations, orthopedic or cardiac surgery without relevant abdominal surgery data, conference abstracts without full text, and editorials or commentaries without original data were excluded.

2.4. Data Extraction

After removing duplicates, 110 unique records were screened by title and abstract. Sixty-five potentially relevant articles were assessed in full text, and 25 studies were included in the final synthesis. Two reviewers independently screened the studies and extracted information on publication details, study design, population and setting, surgery or intervention, aspects of mobilization or ERAS addressed, nursing or implementation factors, and key findings relevant to the review questions. Disagreements were resolved through discussion and consensus. Because of the heterogeneous evidence base, qualitative findings, clinical recommendations, and contextual factors were considered along with quantitative outcomes. The extracted evidence was organized thematically into four domains: physiological, psychological/cognitive, structural, and organizational challenges.

2.5. Assessment of Quality and Evidence

Formal methodological quality appraisal or risk-of-bias assessment was not performed because of the heterogeneity of the evidence. Instead, findings were interpreted according to study design, clinical relevance, consistency across studies, applicability to older adults undergoing major abdominal surgery, and relevance to nursing practice. Greater interpretive weight was assigned to findings supported by multiple studies or higher-level evidence, whereas findings from single-institution or qualitative studies were interpreted within their original context. The absence of formal quality appraisal limits direct comparison of methodological strength and was considered when interpreting the findings.

3. Results

Across the 25 included studies, we identified challenges and facilitators related to early mobilization in four main domains: physiological, psychological /cognitive, structural, and organizational. The studies included clinical trials, qualitative research, systematic reviews, quality-improvement reports, and consensus statements. To provide a structured overview of the evidence base underpinning this critical narrative review, Table 1 presents the characteristics of all included studies, including their design, population, and primary focus area. The subsequent sections present the thematic synthesis organized within these four domains: physiological, psychological/cognitive, structural, and organizational challenges.

3.1 Theoretical Foundations: From Bed Rest to Enhanced Recovery After Surgery (ERAS)

The transition from prolonged bed rest to active mobilization represents an important change in postoperative care. Historically, bed rest was considered protective; however, Havey et al. reframed mobility as a therapeutic intervention that counteracts the inflammatory cascade and supports gut function (5). A systematic review and meta-analysis further confirmed that early postoperative mobilization improves recovery outcomes following gastrointestinal surgery (4). ERAS provides a structured framework for incorporating early mobilization into multimodal perioperative care (6,7). Recent nursing-led evidence has demonstrated the feasibility of integrating early feeding and mobilization into enhanced surgical recovery programs following

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abdominal surgery (25). The 2024 EAES/SAGES consensus similarly emphasized that chronological age alone should not limit appropriate postoperative mobilization (9).

Table 1: Characteristics of Studies Included in the Critical Narrative Review (n = 25)

	Ref	Author (Year)	Study Design	Population/Setting	Key Contribution
1	[1]	Hoogendijk et al. (2019)	Narrative Review	Older adults, general	Frailty as a multidimensional predictor of adverse surgical outcomes
2	[2]	Boden et al. (2018)	Pragmatic RCT	441 adults, upper abdominal surgery	Preoperative physiotherapy reduces respiratory complications
3	[3]	Mohanty et al. (2016)	Best Practices Guideline	Geriatric surgical patients	Optimal perioperative management framework for older adults
4	[4]	Willner et al. (2023)	Systematic Review & Meta-Analysis	Gastrointestinal surgery patients	Early postoperative mobilization improves recovery outcomes
5	[5]	Havey et al. (2013)	Clinical Review	Abdominal surgery patients	Mobility as a therapeutic intervention counteracting inflammatory cascade
6	[6]	Ljungqvist et al. (2017)	Review	Surgical patients	ERAS principles and multimodal perioperative care strategies
7	[7]	Sharifi et al. (2024)	Review	Geriatric surgical patients	Feasibility of ERAS protocols in geriatric surgery
8	[8]	Srinivasan et al. (2025)	Systematic Review & Meta-analysis	Elderly surgical patients	Multimodal prehabilitation integrating exercise, nutrition, and psychological support
9	[9]	Keller et al. (2024)	International Consensus	Older adults, abdominal surgery	EAES/SAGES consensus: age alone should not preclude aggressive mobilization
10	[10]	Svensson-Raskh et al. (2024)	Qualitative	12 healthcare professionals, Sweden	Inner conflict between safety concerns and functional progress in mobilization
11	[11]	Chen et al. (2017)	Cluster RCT	377 older adults, abdominal surgery	Nurse-led mHELP reduced delirium from 15.1% to 6.6%
12	[12]	Ricci et al. (2024)	Systematic Review & NMA	Major abdominal surgery	Physical prehabilitation reduces postoperative complications
13	[13]	Gonella et al. (2024)	Review	Colorectal surgery	Prehab-ERAS-Rehab care continuum for surgical patients
14	[15]	Shum et al. (2025)	Quality Improvement Report	Frail older surgical patients	Nurse-led frailty screening tailors' mobilization to individual risk
15	[16]	Chen et al. (2011)	Prospective Cohort	116 older adults, abdominal surgery	Modified HELP program improves outcomes in abdominal surgery
16	[17]	Castelino et al. (2016)	Systematic Review	Abdominal and thoracic surgery	Early mobilization protocols reduce length of stay and complications
17	[18]	Canales et al. (2025)	Review	Older adult surgical patients	Evidence-practice gap in preoperative frailty screening
18	[19]	Cathomas et al. (2024)	Observational	Older adults, colorectal resection	Suboptimal ERAS adherence in frail older surgical patients
19	[20]	Mahanna-Gabrielli et al. (2020)	Prospective Cohort	246 older noncardiac surgery	Frailty independently associated with postoperative delirium
20	[21]	Wael et al. (2025)	Comparative Analysis	Elderly, emergency surgery	Lower ERAS adherence in emergency vs. elective surgery
21	[22]	den Bakker et al. (2023)	Multicentre RCT	355 adults, major abdominal surgery	Personalised eHealth programme supports postoperative recovery
22	[23]	Guo et al. (2025)	Longitudinal study	Older patients undergoing abdominal surgery involving the digestive system	Examined frailty trajectories during the perioperative period, highlighting the relevance of frailty and functional recovery in older adults
23	[24]	Termkunanon et al. (2025)	Quasi-experimental	Critical illness, abdominal surgery	Early Promoting Mobility Program reduces time to ambulation
24	[25]	Barboza et al. (2025)	Quasi-experimental	Patients undergoing elective abdominal surgery	Evaluated an Enhanced Surgical Recovery Nursing Program focusing on early feeding and mobilization following elective abdominal surgery.
25	[26]	Zhang et al. (2025)	Qualitative	24 clinical professionals	Barriers and facilitators to prehabilitation from interprofessional perspectives

Abbreviations: mHELP: modified Hospital Elder Life Program; ERAS: Enhanced Recovery After Surgery.

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3.2. Physiological Nursing Challenges

3.2.1 Frailty as a Challenge to Standardized Mobilization

Frailty, characterized by increased vulnerability to physiological stressors, strongly predicts adverse surgical outcomes in older adults (1). Best-practice guidelines emphasize the importance of frailty assessment in geriatric surgical patients (3). Importantly, frailty is dynamic rather than a fixed characteristic. A longitudinal study of older adults undergoing abdominal surgery identified distinct frailty trajectories and found that postoperative mobility, time to first out-of-bed activity, nutritional risk, anxiety, postoperative complications, and surgical characteristics were associated with these trajectories (23). These findings reinforce the need for individualized postoperative assessment and mobility planning rather than reliance on a uniform activity level.

Evidence also suggests that physical prehabilitation can reduce postoperative complications in patients undergoing major abdominal surgery, while multimodal prehabilitation integrating exercise, nutrition, and psychological support may be particularly beneficial in older surgical patients (8,12). Frailty has additionally been associated with postoperative delirium in older noncardiac surgical patients (20). For nurses, these findings support mobilization protocols that account for individual functional and physiological capacity (4). The MILES program demonstrated that nurse-led frailty screening using the Clinical Frailty Scale could support individualized perioperative care and mobility planning (15). The Fried Frailty Phenotype, which assesses unintentional weight loss, exhaustion, physical activity, gait speed, and grip strength, represents another commonly used approach to frailty assessment (1).

3.2.2 Hemodynamic Instability

Orthostatic hypotension is common in older surgical patients due to fluid shifts and opioid analgesia. Svensson-Raskh et al. (2024) captured the resulting clinical tension: monitoring is easier when the patient is supine, and the first mobilization attempt is the moment of greatest staff anxiety (10). For nurses, the challenge is to balance physiological safety with the need to promote functional recovery. Before initiating mobilization, nurses should assess a set of clinical readiness criteria including hemodynamic stability, adequate oxygenation, acceptable pain control, adequate level of consciousness to follow commands, and confirmation that lines, drains, and catheters are secured (10,17).

3.2.3 Pain Management: A Central Tension

Pain management requires a balance between adequate analgesia and preservation of cognition and mobility. Opioid-based regimens may increase the risk of delirium and falls, whereas undertreated pain can prevent ambulation. ERAS protocols address this through multimodal strategies, but their effectiveness depends on appropriate nursing assessment and titration (6). Practical strategies include timing mobilization with analgesic effect, monitoring sedation, using non-pharmacological measures, and supporting multimodal, opioid-sparing approaches, including regional techniques, such as epidural analgesia or transversus abdominis plane blocks (6,7,13). Patients undergoing major abdominal surgery also face procedure-specific barriers, including incisional pain, surgical drains and catheters, stoma-related psychological distress, and postoperative ileus (5,9,10,17). Emergency surgical patients face additional challenges, with significantly lower ERAS adherence reported compared with elective cases (21).

3.3. Psychological and Cognitive Challenges

3.3.1 Fear, Motivation, and Missed Care

Fear of falling is a common barrier to mobilization and may be reinforced by well-meaning family members. Nurses can address these concerns through reassurance, clear communication, fall-risk assessment, family involvement, and graduated progression of activity (7,10,17). Beginning with low-intensity activities, such as sitting at the edge of the bed and standing before progressing to ambulation, may help patients build confidence while maintaining safety.

In settings of high workload, mobilization may also be among the first elements of nursing care to be missed because it is perceived as less urgent than medication administration or other immediate clinical tasks (10,15). Mobilization and ambulation have been identified as frequently omitted elements of fundamental care in surgical settings, particularly when nurse-to-patient ratios are high (15,16). The MILES program suggests that successful mobilization of frail older adults may depend not only on additional staffing but also on redistribution of nursing coordination and clinical autonomy (15,16).

3.3.2 Delirium

Postoperative delirium can significantly impair a patient's ability to participate in mobilization. The modified hospital elder life program (mHELP), a

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nurse-led multicomponent intervention combining cognitive stimulation, nutritional support, and early mobilization, reduced delirium incidence from 15.1% to 6.6% (11). However, because these components were implemented simultaneously, the independent contribution of mobilization to the reduction in delirium cannot be isolated. This limitation should be considered when interpreting the program's effectiveness and designing future interventions (11). Overall, the findings support incorporating mobilization within broader care bundles addressing cognitive and nutritional needs (11).

3.4. Structural and Organizational Challenges

3.4.1 When Mobilization Competes with Essential Nursing Tasks

Inadequate nurse-to-patient ratios are a frequently cited barrier to mobilization (10,15). Safely mobilizing a post-laparotomy patient requires sufficient staff time and resources, which may be unavailable during understaffed shifts (4,10). When nurses manage higher patient loads, they must continuously reprioritize care, and activities perceived as less immediately critical, such as ambulation, may be deferred in favor of medication administration, vital-sign monitoring, and wound care (10). Ambiguous interprofessional roles may further contribute to delays when nurses and physiotherapists wait for one another to initiate mobility (10,17).

Therefore, clear role delineation and shared accountability are important for effective interprofessional collaboration (4,17). Nurses are responsible for ongoing assessment of readiness and coordination of mobilization with other care activities, while physiotherapists can guide individualized mobility plans and progression (15,17). Physicians may remove unnecessary activity restrictions, and nursing assistants can provide additional support during transfers. Structured nursing programs and designated mobility champions can facilitate coordination by embedding mobilization within routine postoperative care (15,25). The success of dedicated mobility models further suggests that clear responsibilities and shared accountability can help overcome fragmentation (4,17).

3.4.2 Protocols, Culture, and Implicit Age Bias

The absence of standardized mobilization protocols and inconsistent ERAS implementation represent important organizational concerns. A recent review found that few clinicians routinely screen for frailty preoperatively, indicating a persistent evidence-practice gap (18). ERAS adherence among older adults also remains suboptimal, particularly in frail patients (19). Age-related assumptions may influence decisions about the intensity of postoperative activity; however, direct evidence specifically linking implicit age bias to mobilization remains limited (9,18). Therefore, this concept is primarily inferred from patterns of differential care reported in retrospective and qualitative research rather than established as a direct causal barrier (10,18).

Several structured approaches have shown potential for embedding mobilization within routine care. The MILES program illustrates how nurse-led frailty assessment can support individualized perioperative care (15). A nurse-coordinated enhanced surgical recovery program incorporating early feeding and mobilization has also been evaluated following elective abdominal surgery (25). Personalized eHealth programs may provide complementary support for postoperative recovery (22). Other approaches include dedicated mobility personnel and nurse-initiated mobility protocols that allow bedside nurses to begin mobilization when predefined readiness criteria are met (17). A quasi-experimental study in Thailand found that an Early Promoting Mobility Program incorporating structured mobility goals and a daily checklist reduced time to first ambulation and length of stay after major abdominal surgery (24).

To provide a concise overview of the challenges identified across the four domains and their corresponding evidence-based strategies, Table 2 summarizes the key findings of this critical narrative review.

Table 2: Summary of Key Nursing Challenges and Evidence-Based Strategies

Domain	Key Challenges	Evidence-Based Strategies
Physiological	Frailty, pain, hemodynamic instability	Frailty screening, individualized mobilization, multimodal analgesia, prehabilitation
Psychological/Cognitive	Fear of falling, anxiety, delirium	Patient/family education, cognitive stimulation, nurse-led HELP, motivational communication
Structural	Staffing shortages, competing priorities, unclear professional roles	Mobility champions, dedicated mobility teams, standardized workflows
Organizational	Lack of ERAS adherence, absence of protocols, age bias	Nurse-led implementation, standardized protocols, audit, leadership support

Representative references: (1-13,15-25)
Abbreviations: ERAS: Enhanced Recovery After Surgery.

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3.5 Synthesis of Findings: A Multi-Level Framework

The findings across the four domains suggest that early mobilization is influenced by factors operating at multiple, interdependent levels: the patient's recovery capacity, the nurse's bedside decision-making, interprofessional team organization, and institutional culture and policy. These relationships are synthesized in Figure 1, which illustrates how barriers and facilitators interact across the patient, nurse, unit/team, and system/organization levels.

The framework also illustrates the reciprocal relationship between levels. Institutional policies and unit culture may influence nurses' decisions about mobilization, while successful nurse-led initiatives may contribute to changes in local practice. Therefore, this framework provides an analytical basis for understanding the evidence-practice gap and for designing multi-level implementation strategies.

The framework can also be mapped onto the capability, opportunity, motivation-behavior (COM-B) model (27). Nurses' capability to mobilize patients depends on knowledge and clinical skills; opportunity is shaped by staffing, protocols, and institutional culture; and motivation is influenced by confidence in the evidence, perceived professional role, and leadership reinforcement (27). This perspective indicates that interventions focused solely on education may have limited effects when staffing, protocols, and professional motivation are not addressed concurrently (27).

5. Discussion

This critical narrative review examined the transition from bed rest to active rehabilitation in older adults undergoing major abdominal surgery. Although the rationale for early mobilization is well established, its implementation remains inconsistent. Barriers extend beyond postoperative conditions and include frailty, pain, cognitive vulnerability, fear of falling, reduced physiological reserve, staffing limitations, competing nursing priorities, unclear professional responsibilities, and inconsistent mobility pathways (4,10,15,19). Thus, clinical readiness alone may not ensure mobilization, as implementation also depends on the conditions in which nursing care is delivered.

This evidence–practice gap persists despite increasing emphasis on early mobilization within ERAS and geriatric surgical care. Mobility is closely integrated with pain management, nutrition, delirium prevention, functional assessment, and interdisciplinary coordination (6,7,11,16). A systematic review and meta-analysis found favorable outcomes with ERAS in older adults undergoing major abdominal surgery, but considerable variation in implementation of individual components (28). Similarly, Barboza et al. incorporated feeding and mobilization into a structured nursing recovery program (25). These findings suggest that mobility is more likely to become routine when embedded within established recovery pathways rather than treated as an additional task.

The Knowing–Doing Gap: Mobilization as Negotiation of Risk

A key issue was the gap between recognizing the importance of early mobilization and implementing it consistently. Nurses may value mobility but face competing concerns, such as falls, hypotension, pain, device dislodgement, fatigue, workload, staffing, and limited equipment (4,10,15). Thus, the immediate risks of mobilization may outweigh the less visible consequences of inactivity, including functional decline and loss of independence. The COM-B framework suggests that knowledge alone is insufficient when opportunities for safe mobilization are constrained by workload, staffing, equipment, or competing priorities (27). Nurse-led approaches, such as MILES and the Enhanced Surgical Recovery Nursing Program indicate that mobility may be more sustainable when assessment and coordination are embedded within routine care pathways (15,25).

Frailty, Individualized Care, and Functional Recovery

Frailty supports an individualized approach to postoperative mobilization. Chronological age alone should not determine mobility expectations; baseline function, cognition, comorbidity, nutritional status, physiological stability, pain, and balance should also be considered (1,3,9). Because frailty may change during the perioperative period, repeated functional assessment may be preferable to reliance on a single preoperative classification (23). Prehabilitation may improve functional reserve, postoperative functional capacity, and reduce severe complications (8,12,13,29), although functional improvement does not necessarily result in shorter hospital stays (29). Therefore, early mobilization should be viewed as part of a continuum extending from preoperative preparation to individualized postoperative rehabilitation.

The Nursing Contribution: Self-Care, Therapeutic Relationship, and Shared Goals

The nursing contribution to mobilization extends beyond physical assistance. Major abdominal surgery may temporarily limit patients' ability to perform

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previously independent activities. Orem's Self-Care Deficit Nursing Theory provides a useful perspective because pain, weakness, fatigue, and physiological instability may temporarily create a self-care deficit requiring nursing support (30). From this perspective, sitting at the bedside, transferring to a chair, walking to the bathroom, and progressing toward independent ambulation represent steps toward restoring self-care.

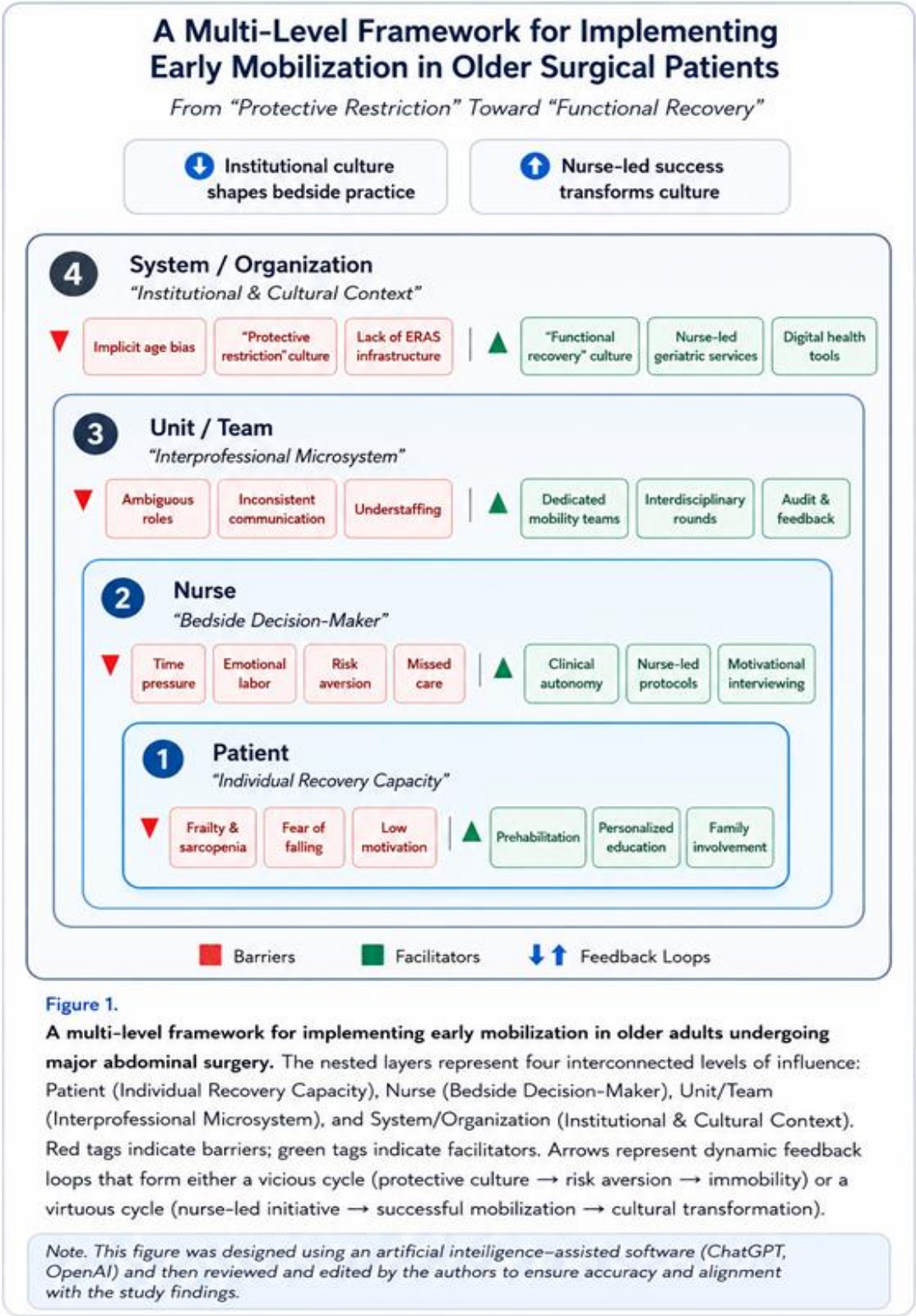


Figure 1.

A multi-level framework for implementing early mobilization in older adults undergoing major abdominal surgery. The nested layers represent four interconnected levels of influence: Patient (Individual Recovery Capacity), Nurse (Bedside Decision-Maker), Unit/Team (Interprofessional Microsystem), and System/Organization (Institutional & Cultural Context). Red tags indicate barriers; green tags indicate facilitators. Arrows represent dynamic feedback loops that form either a vicious cycle (protective culture → risk aversion → immobility) or a virtuous cycle (nurse-led initiative → successful mobilization → cultural transformation).

Note. This figure was designed using an artificial inteiligence–assisted software (ChatGPT, OpenAI) and then reviewed and edited by the authors to ensure accuracy and alignment with the study findings.

Figure 1: A multi-level framework for implementing early mobilization in older adults undergoing major abdominal surgery.

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The nurse-patient relationship is also relevant because older adults may approach mobilization with concerns about pain, falling, disruption of the surgical site, or worsening their condition. Watson's Theory of Human Caring highlights the importance of presence, reassurance, and attention to these concerns (31). King's Theory of Goal Attainment adds the importance of interaction and shared goals between nurses and patients (32). Mobility goals may become more meaningful when linked to activities that matter to the patient, such as sitting in a chair for a meal, walking to the bathroom, or regaining independence at home. These perspectives provide complementary nursing interpretations of early mobilization and complement ERAS and implementation frameworks, such as COM-B (27,30–32).

Mobilization as a Biopsychosocial and Interdisciplinary Intervention

The reviewed evidence suggests that mobility is closely linked to other dimensions of postoperative recovery. The mHELP combined early mobilization with cognitive stimulation and nutritional support and reduced delirium incidence among older adults undergoing abdominal surgery (11,16). Because mHELP is multicomponent, the independent contribution of mobilization cannot be determined; however, the findings support addressing mobility alongside cognitive and nutritional needs. Similarly, the Eat Walk Engage model integrates mobility with nutritional and cognitive care (33). Pain, fatigue, weakness, poor nutritional intake, and cognitive impairment may interact to limit activity, reinforcing the need for coordinated care. ERAS pathways provide a framework for such integration, although implementation of individual components remains variable (28). Nursing programs such as that described by Barboza et al. further demonstrate how mobility can be incorporated into routine recovery activities alongside feeding, pain management, toileting, and functional assessment (25).

Safety, Organizational Context, and Implementation

Safety is central to postoperative mobilization, particularly in frail patients with orthostatic symptoms, pain, impaired balance, or multiple medical devices (10,17). However, these risks do not necessarily justify prolonged bed rest. Safe mobilization requires assessment of physiological stability, appropriate pain management, securement of lines and drains, suitable mobility aids, and adequate assistance, with the patient's response guiding progression (17).

Organizational conditions also influence implementation. Staffing shortages, competing nursing priorities, unclear professional roles, and limited equipment may delay mobilization (10,15). Nurses can assess readiness, manage symptoms, coordinate assistance, and monitor responses, while physiotherapists contribute to individualized mobility planning and progression (17). Therefore, a shared multidisciplinary approach is preferable. Emergency surgical patients may require greater caution because of clinical instability and limited preoperative optimization, which may reduce adherence to ERAS components (21). This should not necessarily be viewed as implementation failure; rather, mobilization should be initiated and progressed according to clinical stability. Overall, these findings support a criterion-based approach rather than relying solely on postoperative day. Physiological status, symptoms, functional ability, and response to previous activity should guide decisions regarding initiation and progression of mobilization.

Reframing the Nurse's Role and Organizational Leadership

Taken together, the findings position nurses as key coordinators of postoperative mobility rather than merely providers of physical assistance. Nurses assess readiness, identify barriers, manage symptoms, communicate with patients and families, coordinate assistance, and determine when activity should be modified or stopped. The MILES program illustrates how nurse-led perioperative coordination can integrate frailty assessment into routine care, while nursing-led quality-improvement approaches have incorporated structured mobility promotion into hospital workflows (15,33,34).

However, education alone is unlikely to overcome implementation barriers related to staffing, equipment, workflow, and interprofessional coordination. Nursing leadership should, therefore, complement rather than replace the roles of physiotherapists and other professionals, with nurses contributing to assessment, coordination, and day-to-day implementation within a shared multidisciplinary model. Sustainable implementation requires clear responsibilities, adequate staffing and equipment, leadership support, and effective communication across professional groups.

Functional Recovery and Practical Implications for Bedside Nursing

Length of stay remains an important outcome, but it does not fully capture recovery in older adults. Functional independence, activities of daily living, discharge destination, and maintenance of mobility after discharge may provide a more patient-centred

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assessment of recovery (4,24). The findings of Xun et al. (29), in which prehabilitation improved functional capacity without significantly reducing length of stay, further illustrate that functional recovery and hospital utilization do not necessarily change in parallel.

Therefore, future studies should examine functional outcomes alongside conventional measures, such as time to first ambulation and length of stay. Measures including the Barthel Index, mobility performance, activities of daily living, discharge destination, patient-reported outcomes, and longer-term functional status may provide a more complete assessment of recovery.

The evidence synthesized in this review can also inform bedside practice. Table 3 presents a 12-step guide for progressive early mobilization. This author-developed, evidence-informed synthesis is not a validated clinical protocol and should complement, rather than replace, institutional policies, clinical judgment, and physiotherapy assessment.

Table 3: Bedside Nursing Guide for Progressive Early Mobilization of Older Adults After Major Abdominal Surgery

Step	Nursing Action	Key Considerations
1. Establish readiness	Review surgical orders, postoperative restrictions, baseline functional status, frailty, and current clinical condition.	Consider preoperative mobility, level of assistance, type of surgery, and postoperative functional reserve.
2. Assess physiological stability	Assess blood pressure, heart rate, respiratory status, oxygenation, temperature, and current symptoms before activity.	Pay particular attention to hypotension, hypoxemia, significant tachycardia, dizziness, or acute clinical deterioration.
3. Assess pain and cognition	Assess pain at rest and with movement, alertness, orientation, and cognitive status before mobilization.	Optimize pain control while avoiding excessive sedation; identify delirium or reduced responsiveness.
4. Check lines, drains, and equipment	Ensure IV lines, urinary catheters, drains, oxygen tubing, and other devices are secure before movement.	Determine which devices can safely accompany the patient and obtain additional assistance when required.
5. Explain and agree on the goal	Explain the planned activity and establish an achievable mobility goal with the patient.	Use individualized, meaningful goals, such as sitting in a chair for a meal or walking to the bathroom.
6. Sit	Assist the patient to sit at the edge of the bed.	Observe for dizziness, pallor, nausea, dyspnea, or excessive fatigue before progressing.
7. Stand	Assist the patient to stand using appropriate footwear and mobility equipment.	Allow sufficient time for postural adjustment and reassess symptoms and balance.
8. Transfer or ambulate	Progress from chair transfer to short-distance ambulation when tolerated.	Begin with supervised, short-distance activity and increase according to individual tolerance and functional response.
9. Monitor during activity	Observe symptoms, gait, balance, respiratory effort, mental status, and functional response.	Modify or stop activity in the presence of significant instability, severe dyspnea, chest pain, syncope, new neurological symptoms, or acute deterioration.
10. Reassess after activity	Safely return the patient to the planned position and reassess symptoms and tolerance.	Use the patient's response to determine the next mobility goal and level of assistance.
11. Document	Record level of assistance, activity achieved, distance or duration when relevant, symptoms, adverse events, and response.	Communicate the patient's current functional mobility level to the next nurse and multidisciplinary team.
12. Escalate when necessary	Stop mobilization and notify the responsible clinician or rapid-response team when clinically indicated.	Follow institutional criteria for clinical deterioration; do not continue mobilization when acute instability requires assessment or resuscitative care.
The guide emphasizes a progression from readiness assessment to sitting, standing, transfer, and ambulation, with reassessment determining subsequent activity and level of assistance. Importantly, documentation should extend beyond recording that the patient "mobilized" and should capture assistance level, mobility aid, distance or duration when relevant, symptoms, adverse events, and response. This makes mobility a visible component of routine functional assessment and care planning rather than an additional stand-alone task.		

Cultural Context and Family Involvement

Cultural and family factors received less attention in the available literature than physiological and organizational barriers, but they may influence participation in postoperative mobility. Older adults and their families may have different expectations regarding postoperative rest, dependence, caregiving, and the role of healthcare professionals.

In an Asian hospital context, ward nurses identified patient expectations, family involvement, safety concerns, and organization of care as factors influencing older patients' participation in physical activity (35). These findings should be interpreted

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within their specific cultural and healthcare setting rather than generalized to all Asian populations.

Family members may encourage activity and provide continuity between hospital and home, but protective behavior may also discourage movement when rest is perceived as safer. Patient and family education should therefore address specific concerns and expectations. Understanding the patient's usual level of independence, anticipated support at home, and family concerns about mobility may help nurses establish realistic goals. Cultural assessment should consequently remain individualized rather than based on broad assumptions about cultural groups.

Implications for Nursing Practice and Research

Early mobilization should be integrated into routine nursing assessment and care planning, with frailty and baseline function guiding assistance rather than chronological age alone (1,23). Its implementation should extend across the perioperative continuum, linking prehabilitation with ERAS-based postoperative recovery (6,12,28,29). Nurses require clear mobility criteria, appropriate equipment, adequate staffing, and interdisciplinary support, while patient and family concerns should be incorporated into individualized mobility planning (10,17,27,36).

Future research should focus on how early mobilization can be sustainably implemented in routine care. Multicenter studies comparing nurse-led, physiotherapy-led, and shared-care models should evaluate functional independence, discharge outcomes, patient experience, and longer-term recovery in addition to time to first ambulation and length of stay.

5.1 Limitations

This critical narrative review has several limitations. First, the search was restricted to English-language publications, which may have excluded relevant evidence from non-English-speaking settings and limited cultural representation. Second, formal methodological quality appraisal was not undertaken, consistent with the critical narrative approach; therefore, the review provides a critical synthesis rather than a graded estimate of intervention effectiveness. Third, variations in definitions of early mobilization, study designs, populations, interventions, and outcome measures limited direct comparison of findings and the assessment of relative evidence strength. Fourth, the evidence was weighted toward high-income healthcare systems, with limited evidence from resource-constrained and culturally diverse settings, while several interventions were evaluated in single institutions, limiting transferability. Finally, although the search and selection process were structured and conducted by two reviewers, narrative synthesis involves reviewer interpretation, and some subjectivity in the organization and interpretation of findings cannot be completely excluded.

5.2 Conclusion

Early mobilization after major abdominal surgery should be viewed as an integral component of functional recovery rather than simply a strategy for achieving earlier ambulation. In older adults, its implementation is influenced by frailty, postoperative symptoms, cognitive and psychological factors, nursing workload, professional roles, and organizational conditions. Frailty should guide the level of support rather than justify prolonged inactivity, and mobility should be individualized according to current clinical and functional status. From a nursing perspective, Orem, Watson, and King provide complementary perspectives through restoration of self-care, the therapeutic relationship, and shared goal-setting. Structured assessment, progressive activity, reassessment, and meaningful documentation can help integrate mobility into routine care. Sustainable implementation, however, requires clear roles, adequate resources, interdisciplinary coordination, and organizational support in addition to nurse education. Future research should prioritize pragmatic, multicenter implementation studies assessing functional independence, patient experience, discharge outcomes, and sustained recovery alongside conventional outcomes, such as length of stay.

Statements

AI Use: AI-assisted tools were used for language editing and the initial design of Figure 1. The figure was reviewed and finalized by the authors. No AI was used for the literature search, data analysis, evidence interpretation, or scientific conclusions. The authors take full responsibility for the manuscript and figure.

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Data Reproducibility: No datasets were generated or analyzed during the current study. The evidence synthesized in this review was obtained from published literature, and the search strategy and study selection process are described in the manuscript to support reproducibility.

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