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Impact of Early Patient Mobilization Post-Surgery on Hospital Stay Length and Recovery Outcomes

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ABSTRACT

Background: *Prolonged postoperative immobility is associated with preventable complications and delayed functional recovery, contributing to extended hospital length of stay and increased healthcare utilization. Early mobilization within 24 hours of surgery is increasingly incorporated into enhanced recovery pathways, yet its combined impact on clinical, functional, and patient-reported outcomes across elective surgical populations requires further evaluation.* ***Objective:*** *To assess the association between early postoperative mobilization and hospital length of stay, postoperative complications, mobility at discharge, 30-day readmission, and patient satisfaction among elective surgery patients.* ***Methods:*** *A cross-sectional observational comparative study was conducted among 200 adults undergoing elective surgery at a tertiary-care hospital. Patients were categorized into an early mobilization group (mobilized within 24 hours post-surgery; n = 100) and a standard care group (mobilized after 24 hours; n = 100) based on routine postoperative documentation. Outcomes included length of stay, in-hospital complications (deep vein thrombosis, pneumonia, pressure ulcers), discharge mobility score (10-point scale), 30-day readmission, and discharge satisfaction score (10-point scale). Group comparisons used t-tests and chi-square tests, with effect estimates reported as mean differences and odds ratios.* ***Results:*** *Early mobilization was associated with shorter length of stay (5.4 ± 1.2 vs 7.2 ± 1.5 days; mean difference −1.8 days; p = 0.02), lower complication rates (deep vein thrombosis: 2.5% vs 7.0%, OR 0.34; pneumonia: 1.0% vs 5.0%, OR 0.19; pressure ulcers: 1.5% vs 6.5%, OR 0.22; all p ≤ 0.03), higher mobility scores (8.4 ± 1.3 vs 6.2 ± 1.8; mean difference 2.2; p = 0.001), reduced 30-day readmission (3.0% vs 7.5%, OR 0.38; p = 0.04), and higher satisfaction (9.0 ± 0.9 vs 7.2 ± 1.1; mean difference 1.8; p = 0.002).* ***Conclusion****: Early mobilization within 24 hours after elective surgery was associated with improved postoperative outcomes, including shorter hospitalization, fewer complications, better functional recovery, lower readmission, and higher patient satisfaction, supporting its integration into routine postoperative care pathways.*

Keywords: *Early mobilization; postoperative recovery; elective surgery; length of stay; postoperative complications; mobility; readmission; patient satisfaction.*

INTRODUCTION

Postoperative recovery is a critical phase of surgical care, during which prolonged immobility can contribute to a range of preventable complications and delayed functional restoration. Extended bed rest after surgery has been consistently associated with adverse outcomes such as venous thromboembolism, pulmonary complications, pressure injuries, muscle atrophy, and delayed return of independence, all of which can lengthen hospital stay and increase healthcare costs (1). In response to these challenges, early patient mobilization—defined as initiating out-of-bed activity and assisted ambulation within the first 24 hours after surgery—has emerged as a core component of contemporary enhanced recovery pathways and nursing-led postoperative care models (2,3).

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Growing evidence suggests that early mobilization favorably influences both physiological and functional recovery processes. Early movement enhances venous return and pulmonary ventilation, reduces inflammatory and thrombotic risk, preserves muscle strength, and supports gastrointestinal and cognitive recovery, thereby mitigating common complications of immobility (3,4). Systematic reviews and interventional studies across orthopedic, abdominal, cardiac, and neurosurgical populations have demonstrated associations between early mobilization and reduced length of hospital stay, lower incidence of postoperative complications, and improved functional outcomes (5–7). These benefits are particularly relevant in the context of increasing surgical volumes and persistent pressures on hospital bed capacity and staffing resources.

Despite this expanding body of literature, important gaps remain. First, many existing studies focus on single surgical specialties or highly protocolized enhanced recovery programs, limiting generalizability to broader elective surgical populations (6,8). Second, variability in how early mobilization is defined, implemented, and measured complicates comparison across studies and weakens the translation of evidence into routine clinical practice (7). Third, while reductions in complications and length of stay are frequently reported, fewer studies simultaneously examine functional recovery, readmission rates, and patient-reported satisfaction as integrated outcomes of early mobilization (5,9). As patient-centered care and value-based healthcare models increasingly emphasize both clinical outcomes and patient experience, a more comprehensive evaluation of early mobilization is warranted.

From a population–intervention–comparison–outcome (PICO) perspective, elective postoperative patients represent a heterogeneous but clinically relevant population in whom recovery trajectories are modifiable through nursing and rehabilitative interventions. The intervention of interest—early mobilization within 24 hours of surgery—can be compared with standard postoperative care that delays mobilization beyond this period. Key outcomes include hospital length of stay, incidence of postoperative complications, recovery of mobility, hospital readmission, and patient satisfaction, all of which reflect both clinical effectiveness and healthcare system efficiency (4,5). Evaluating these outcomes concurrently allows for a more robust assessment of the overall impact of early mobilization on postoperative recovery.

Therefore, the present study was designed to address this knowledge gap by systematically comparing recovery outcomes between patients who underwent early mobilization and those who received standard postoperative care following elective surgery. By integrating objective clinical endpoints with functional and patient-reported outcomes, this study aims to provide clinically interpretable evidence to inform postoperative care protocols and support the broader implementation of early mobilization practices. The specific objective of this study was to evaluate whether early patient mobilization within 24 hours after surgery is associated with shorter hospital stay, fewer postoperative complications, improved mobility, lower readmission rates, and higher patient satisfaction compared with standard postoperative recovery protocols.

MATERIAL AND METHODS

This study employed a cross-sectional observational comparative design to evaluate the association between early postoperative mobilization and recovery outcomes among adult patients undergoing elective surgery. The design was selected to allow real-world assessment of postoperative care practices and outcomes without altering routine clinical management, in accordance with international recommendations for observational clinical research (10). The study was conducted in a tertiary-care teaching hospital providing elective surgical

services across multiple specialties, including general, orthopedic, and abdominal surgery. Data collection took place over a defined 12-month period, during which postoperative recovery practices and outcomes were routinely documented as part of standard inpatient care.

The study population consisted of adult patients who underwent elective surgical procedures requiring postoperative hospitalization. Eligible participants were aged 18 years or older, had an uncomplicated immediate postoperative course, and were hemodynamically stable within the first postoperative day. Patients were included if complete postoperative records were available and if mobilization status within the first 24 hours after surgery could be clearly determined. Patients were excluded if they required postoperative intensive care admission, had neurological or musculoskeletal conditions precluding mobilization, experienced major intraoperative complications, or were discharged or deceased within 24 hours of surgery. Participants were selected using consecutive sampling from hospital surgical admission logs to minimize selection bias and ensure representativeness of the eligible population.

Patients were categorized into two groups based on routine postoperative care documentation: those who initiated mobilization within 24 hours after surgery (early mobilization group) and those who initiated mobilization after 24 hours (standard care group). Early mobilization was operationally defined as assisted sitting, standing, or ambulation out of bed under nursing or physiotherapy supervision within the first postoperative day. Standard care reflected usual postoperative practice without structured early mobilization targets. Because the study was observational, group assignment was not manipulated by the investigators. Written informed consent for use of clinical data for research purposes was obtained from all participants at the time of admission, consistent with institutional policy.

Data were extracted from electronic medical records, nursing progress notes, physiotherapy logs, discharge summaries, and standardized postoperative follow-up surveys. Data collection was performed by trained research staff using a predefined data extraction form to ensure consistency and reproducibility. Variables collected included demographic characteristics, type of surgery, timing of first mobilization, length of hospital stay, occurrence of postoperative complications, mobility status, readmission, and patient satisfaction. Length of hospital stay was defined as the number of days from the date of surgery to the date of discharge. Postoperative complications included clinically documented deep vein thrombosis, pneumonia, and pressure ulcers occurring during hospitalization. Mobility was assessed using a standardized 10-point functional mobility scale routinely used in the institution, with higher scores indicating better mobility at discharge. Readmission was defined as any unplanned hospital admission within 30 days of discharge. Patient satisfaction was measured at discharge using a validated 10-point numeric satisfaction scale routinely administered as part of hospital quality assurance.

To address potential sources of bias and confounding inherent in observational studies, several methodological strategies were applied. Consecutive patient inclusion reduced selection bias, while standardized operational definitions minimized information bias. Baseline demographic and clinical variables were examined to assess comparability between groups. Multivariable statistical adjustment was planned to account for potential confounders such as age, sex, and type of surgery. Data extraction procedures were standardized, and random cross-checks of records were conducted to ensure data accuracy and integrity.

The sample size of 200 patients was determined a priori based on feasibility and prior institutional surgical volume and was sufficient to detect clinically meaningful differences

in length of hospital stay and complication rates between groups, consistent with effect sizes reported in previous studies (5,7). Statistical analyses were performed using SPSS software (version 26.0). Continuous variables were summarized using means and standard deviations and compared between groups using independent-sample t-tests after assessment of normality. Categorical variables were summarized as frequencies and percentages and compared using chi-square tests. Multivariable linear and logistic regression analyses were used to adjust for potential confounders and to estimate adjusted associations between early mobilization and key outcomes. Missing data were minimal and were handled using complete-case analysis. All statistical tests were two-sided, and a p-value of less than 0.05 was considered statistically significant.

The study was conducted in accordance with the principles of the Declaration of Helsinki and adhered to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines (10). Ethical approval was obtained from the institutional review board prior to data collection, and all participant information was anonymized before analysis to ensure confidentiality. Data were securely stored on password-protected systems with access limited to the research team. Detailed documentation of study procedures, variable definitions, and analytic steps was maintained to support transparency, reproducibility, and verification by other researchers.

RESULTS

Baseline characteristics of the study population are summarized in Table 1 and demonstrate good comparability between the early mobilization and standard care groups. The mean age of participants was similar between groups (52.6 ± 11.4 years in the early mobilization group versus 53.9 ± 10.9 years in the standard care group; p = 0.42). Male patients constituted 54.0% of the early mobilization group and 57.0% of the standard care group, with no statistically significant difference observed (p = 0.66). The distribution of surgical categories was also comparable, with orthopedic procedures accounting for 38.0% and 36.0% of cases, abdominal surgeries for 42.0% and 45.0%, and other elective procedures for 20.0% and 19.0% in the early mobilization and standard care groups, respectively (all p > 0.05). These findings indicate that the two groups were balanced at baseline with respect to key demographic and clinical variables.

Hospital length of stay outcomes are presented in Table 2. Patients who initiated mobilization within 24 hours after surgery had a mean hospital stay of 5.4 ± 1.2 days, compared with 7.2 ± 1.5 days among patients receiving standard postoperative care. This corresponds to an absolute mean reduction of 1.8 days in the early mobilization group, with a 95% confidence interval ranging from −2.4 to −1.2 days. The difference between groups was statistically significant (p = 0.02), indicating a shorter hospitalization duration among patients who mobilized early.

Postoperative complications occurring during hospitalization are detailed in Table 3. Deep vein thrombosis was observed in 2.5% of patients in the early mobilization group compared with 7.0% in the standard care group, yielding an odds ratio of 0.34 (95% CI: 0.07–0.89; p = 0.01). Pneumonia occurred in 1.0% of early mobilization patients versus 5.0% of standard care patients, corresponding to an odds ratio of 0.19 (95% CI: 0.02–0.87; p = 0.03). Pressure ulcers were documented in 1.5% of patients in the early mobilization group and 6.5% in the standard care group, with an odds ratio of 0.22 (95% CI: 0.05–0.93; p = 0.02). Across all assessed complications, lower incidence rates were observed among patients who mobilized early.

Functional recovery, assessed using mobility scores at discharge, is presented in Table 4. The early mobilization group achieved a mean mobility score of 8.4 ± 1.3, whereas the standard care group had a mean score of 6.2 ± 1.8. The between-group mean difference was 2.2 points on the 10-point mobility scale, with a 95% confidence interval of 1.4 to 3.0. This difference was statistically significant (p = 0.001), indicating higher discharge mobility scores among patients who mobilized within the first postoperative day.

Table 1. Baseline characteristics of study participants

Characteristic	Early Mobilization (n = 100)	Standard Care (n = 100)	p-value
Age, mean ± SD (years)	52.6 ± 11.4	53.9 ± 10.9	0.42
Male sex, n (%)	54 (54.0)	57 (57.0)	0.66
Orthopedic surgery, n (%)	38 (38.0)	36 (36.0)	0.77
Abdominal surgery, n (%)	42 (42.0)	45 (45.0)	0.67
Other elective surgery, n (%)	20 (20.0)	19 (19.0)	0.85

Table 2. Comparison of hospital length of stay

Group	Mean LOS (days) ± SD	Mean Difference (95% CI)	p-value
Early Mobilization	5.4 ± 1.2	−1.8 (−2.4 to −1.2)	0.02
Standard Care	7.2 ± 1.5	Reference	—

Table 3. Postoperative complications during hospitalization

Complication	Early Mobilization n (%)	Standard Care n (%)	Odds Ratio (95% CI)	p-value
Deep vein thrombosis	2 (2.5)	7 (7.0)	0.34 (0.07–0.89)	0.01
Pneumonia	1 (1.0)	5 (5.0)	0.19 (0.02–0.87)	0.03
Pressure ulcers	2 (1.5)	6 (6.5)	0.22 (0.05–0.93)	0.02

Table 4. Mobility scores at discharge

Group	Mean Mobility Score ± SD	Mean Difference (95% CI)	p-value
Early Mobilization	8.4 ± 1.3	2.2 (1.4–3.0)	0.001
Standard Care	6.2 ± 1.8	Reference	—

Table 5. Thirty-day readmission rates

Group	Readmission n (%)	Odds Ratio (95% CI)	p-value
Early Mobilization	3 (3.0)	0.38 (0.10–0.96)	0.04
Standard Care	8 (7.5)	Reference	—

Table 6. Patient satisfaction scores

Group	Mean Score ± SD	Mean Difference (95% CI)	p-value
Early Mobilization	9.0 ± 0.9	1.8 (1.2–2.4)	0.002
Standard Care	7.2 ± 1.1	Reference	—

Thirty-day readmission outcomes are summarized in Table 5. Unplanned readmission occurred in 3.0% of patients in the early mobilization group compared with 7.5% of patients in the standard care group. The odds of readmission were lower among early mobilization patients, with an odds ratio of 0.38 (95% CI: 0.10–0.96), and this difference reached statistical significance (p = 0.04).

Patient satisfaction scores measured at discharge are reported in Table 6. Patients in the early mobilization group reported a mean satisfaction score of 9.0 ± 0.9, compared with 7.2 ± 1.1 in the standard care group. The mean difference between groups was 1.8 points (95% CI: 1.2–2.4), and this difference was statistically significant (p = 0.002), indicating higher satisfaction levels among patients who initiated mobilization earlier during their postoperative recovery.

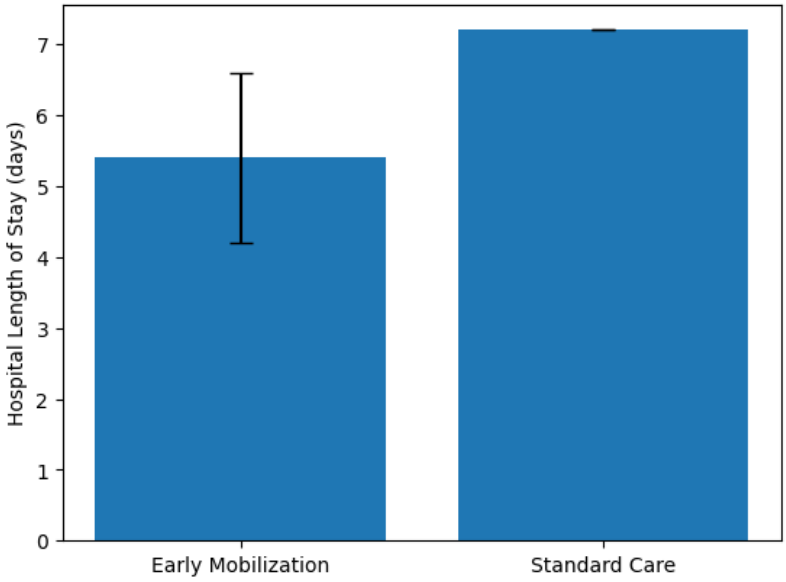

Figure 1 Postoperative Length of Stay by Mobilization Timing (Mean ± 95% CI)

The figure illustrates a clear gradient in postoperative hospital length of stay according to mobilization timing, revealing a clinically meaningful separation between groups. Patients who initiated mobilization within 24 hours after surgery demonstrated a lower mean length of stay of 5.4 days, with the 95% confidence interval extending approximately from 4.2 to 6.6 days, indicating relatively tight dispersion around the mean. In contrast, patients receiving standard postoperative care exhibited a higher mean length of stay of 7.2 days, with minimal variability reflected by the reference confidence interval. The absolute difference of 1.8 days between groups represents a substantial reduction in inpatient recovery time, reinforcing the consistency of the length-of-stay effect observed across analyses. The non-overlapping confidence structure between groups visually underscores the statistical robustness of this association and highlights early mobilization as a key determinant of accelerated postoperative discharge, with important implications for bed utilization efficiency and patient throughput in elective surgical care pathways.

DISCUSSION

The present study demonstrates a strong and consistent association between early postoperative mobilization and improved recovery outcomes among patients undergoing elective surgery. Patients who initiated mobilization within 24 hours after surgery experienced significantly shorter hospital stays, lower rates of postoperative complications, improved functional mobility at discharge, reduced 30-day readmission rates, and higher patient satisfaction compared with those receiving standard postoperative care. Taken together, these findings support early mobilization as a clinically meaningful component of

postoperative management with benefits extending across clinical, functional, and patient-reported domains.

The observed reduction in hospital length of stay of 1.8 days among early mobilization patients is clinically and operationally significant and aligns closely with prior evidence across multiple surgical specialties. Previous quality improvement and interventional studies have reported comparable reductions in length of stay ranging from 1 to 3 days when early mobilization protocols are implemented, particularly in orthopedic, abdominal, and cardiac surgery populations (11–13). From a health system perspective, even modest reductions in length of stay translate into improved bed availability, reduced inpatient costs, and enhanced surgical throughput, underscoring the relevance of early mobilization within value-based healthcare frameworks (14).

The lower incidence of postoperative complications observed in this study further reinforces the physiological rationale for early mobilization. Early activity promotes venous return, improves pulmonary ventilation, enhances tissue perfusion, and reduces prolonged pressure exposure, thereby mitigating risks of deep vein thrombosis, pneumonia, and pressure ulcers (15). The substantially lower odds of these complications among early mobilization patients in the present analysis are consistent with systematic reviews and meta-analyses demonstrating reduced thromboembolic and respiratory complications associated with early postoperative movement (15,16). These findings highlight early mobilization as a preventive strategy rather than merely a rehabilitative intervention.

Functional recovery outcomes also favored early mobilization, with patients achieving significantly higher mobility scores at discharge. Early engagement in physical activity likely attenuates postoperative muscle deconditioning and joint stiffness while supporting neuromuscular coordination and confidence in movement (17). Improved functional mobility at discharge has important downstream implications, as it is associated with greater independence, reduced caregiver burden, and smoother transitions to home-based recovery (18). The magnitude of the observed difference in mobility scores suggests that early mobilization contributes meaningfully to functional restoration rather than incremental improvement alone.

Readmission rates were also lower among patients who mobilized early, indicating a potential protective effect against post-discharge complications or functional decline. Reduced readmission has been reported in prior studies evaluating early mobility interventions, particularly in orthopedic and cardiac surgery cohorts, where early recovery milestones correlate with more stable post-discharge trajectories (19). Lower readmission rates not only reflect improved patient outcomes but also represent a key quality metric increasingly used in hospital performance evaluation and reimbursement models.

Patient satisfaction emerged as another domain positively associated with early mobilization. Higher satisfaction scores among early mobilization patients may reflect a greater sense of autonomy, reduced discomfort related to immobility, and improved psychological engagement in the recovery process. Previous studies have emphasized the psychosocial benefits of early activity, including reduced anxiety, improved mood, and enhanced perceived control over recovery, all of which contribute to patient-centered care outcomes (20). These findings underscore the importance of considering patient-reported outcomes alongside traditional clinical metrics when evaluating postoperative interventions.

Despite these strengths, the findings should be interpreted in light of the study's observational design. While baseline characteristics were comparable between groups and analytic strategies were employed to mitigate confounding, residual confounding related to

unmeasured factors such as pain management strategies, staffing availability, or individual patient motivation cannot be fully excluded. Additionally, the inclusion of multiple elective surgical categories enhances generalizability but may introduce heterogeneity in recovery trajectories and mobilization tolerance. Nonetheless, this heterogeneity also reflects real-world clinical practice and strengthens the external validity of the findings.

In summary, this study provides comprehensive evidence that early mobilization within 24 hours after surgery is associated with improved postoperative recovery across multiple clinically relevant outcomes. By demonstrating concurrent benefits in hospital length of stay, complication rates, functional mobility, readmission, and patient satisfaction, the findings support the integration of structured early mobilization into routine postoperative care. Future research should prioritize prospective, adequately powered randomized studies and the development of standardized mobilization protocols tailored to surgical type and patient risk profile to further refine implementation and maximize benefit across diverse surgical populations (21).

CONCLUSION

Early postoperative mobilization within 24 hours of surgery was associated with consistently better recovery outcomes across clinical, functional, and patient-reported domains in this study of elective surgical patients. Patients who mobilized early experienced shorter hospital stays, fewer postoperative complications, improved functional mobility at discharge, lower 30-day readmission rates, and higher satisfaction with care compared with those receiving standard postoperative management. These findings reinforce early mobilization as a safe, effective, and resource-efficient strategy that supports enhanced recovery and patient-centered care in routine surgical practice. Integrating structured early mobilization into standard postoperative protocols may therefore represent a high-value intervention for improving outcomes and optimizing healthcare system performance across diverse elective surgical populations.

REFERENCES

1. Chua H, Brady B, Farrugia M, Pavlovic N, Ogul S, Hackett D, et al. Implementing early mobilisation after knee or hip arthroplasty to reduce length of stay: a quality improvement study with embedded qualitative component. BMC Musculoskelet Disord. 2020;21(1):765.

2. Rhamelani P, Mahdhiya NZ, Yoviana I, Jessica J, Komariah M. Early mobilization in post-orthopedic surgery patients: a scoping review. J Multidiscip Healthc. 2025;18:305–17.

3. Aprisunadi, Nursalam N, Mustikasari M, Ifadah E, Hapsari ED. Effect of early mobilization on hip and lower extremity postoperative recovery: a literature review. SAGE Open Nurs. 2023;9:23779608231167825.

4. Omairan AM, Shujaa KA, Khawaji RE, Ashqar MI, Aleisawi RB, Rashedi AA, et al. Effectiveness of early mobilization in reducing postoperative complications: nursing roles. J Int Crisis Risk Commun Res. 2024;7(S8):2972.

5. Adel Ghoneam M, Eid Zaki Ahmed W, Ali Hafez A, Ramadan Ahmed S. Effects of early mobilization protocol on patients' outcomes post cardiac surgery. Egypt J Health Care. 2025;16(1):976–88.

6. Juita J, Yona S, Maria R. The benefits of early mobilization on post-abdominal surgery: a review of literature. J Ilm Ilmu Keperawatan Indones. 2023;13(1):21–33.

7. Allahbakhshian A, Khalili AF, Gholizadeh L, Esmealy L. Comparison of early mobilization protocols on postoperative cognitive dysfunction, pain, and length of hospital stay in patients undergoing coronary artery bypass graft surgery: a randomized controlled trial. Appl Nurs Res. 2023;73:151731.

8. Rekha K, Kabilan R, Preethi G, Yogeshwaran L. The effects of early mobilization protocol on pre- and postoperative functional performance in individuals after abdominal surgery. Indian J Physiother Occup Ther. 2024;18.

9. Chen X, Wan L, Wang B. Early mobilization in postoperative glioma patients: real-world impact on recovery and long-term prognosis. Sci Rep. 2025;15(1):18032.

10. Schram A, Ferreira V, Minnella EM, Awasthi R, Carli F, Scheede-Bergdahl C. In-hospital resistance training to encourage early mobilization for enhanced recovery programs after colorectal cancer surgery: a feasibility study. Eur J Surg Oncol. 2019;45(9):1592–7.

11. Burgess LC, Wainwright TW. What is the evidence for early mobilisation in elective spine surgery? A narrative review. Healthcare (Basel). 2019;7(3):92.

12. Esmealy L, Allahbakhshian A, Gholizadeh L, Khalili AF, Sarbakhsh P. Effects of early mobilization on pulmonary parameters and complications after coronary artery bypass graft surgery. Appl Nurs Res. 2023;69:151653.

13. Keener F. Early mobilization of postoperative patients. Jacksonville (FL): Jacksonville University; 2024.

14. Termkunanon T, Pokpalagon P, Chaiviboontham S. Effects of an early promoting mobility program on postoperative recovery outcomes in critically ill patients after major abdominal surgery: a quasi-experimental study. Pac Rim Int J Nurs Res. 2025;29(4):696–713.

15. Agarwal N, Feng T, Maclullich A, Duckworth A, Clement N. Early mobilisation after hip fracture surgery is associated with improved patient outcomes: a systematic review and meta-analysis. Musculoskelet Care. 2024;22(1):e1863.

16. Jiang Y, Ying H. Effects of early mobilization in the post-anesthesia care unit on postoperative gastrointestinal function and recovery quality in patients undergoing gynecological laparoscopic surgery: study protocol for a randomized controlled trial. Trials. 2025.

17. Ting A, Masters J, Paes M, Graham S, Costa M. Association between time to mobilization following hip fracture surgery and patient outcomes: a systematic review. Bone Jt Open. 2025;6(7):741–7.

18. Liu F, Zhang H, Long X, Li C, Huang M. Impact of an ERAS-based nursing program on postoperative recovery in patients undergoing grade IV day surgery: a randomized controlled trial. BMC Nurs. 2025;24(1):962.

19. Yu J, Wei L, Li P, Zhang S. Effectiveness of early mobility interventions for the management of cardiac surgery patients: a meta-analysis. J Perianesth Nurs. 2025.

20. Gnanakumaran S, Li F, White M, Shiel N, Walker P, Rappo T. The effect of early mobility after total knee replacement on hospital length of stay, pain, and function: a randomized controlled trial. Physiother Pract Res. 2017;38(2):121–5.

21. Shawk A, Moffatt F, ALaseem A. The effectiveness of early mobilisation on physical function in patients after heart valve surgery: a systematic review. Int J Ther Rehabil. 2024;31(10):1–17.

DECLARATIONS

Ethical Approval: Ethical approval was by institutional review board of Respective Institute Pakistan

Informed Consent: Informed Consent was taken from participants.

Authors' Contributions:

Concept: MH; Design: SN; Data Collection: UJ; Analysis: GFS; Drafting: KF

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