GLOBAL HEALTH & MEDICINE
ISSN / eISSN: 2434-9186 / 2434-9194
Volume 08, Issue 06.
https://ghsjournal.com/

Effectiveness of early mobilization following total Hip Replacement surgery

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ABSTRACT:
Background: Total hip replacement surgery is performed to help patients with hip joint diseases who are suffering from pain and poor function. Moving early after your cardiac procedure may help with your recovery, lower the chance of problems and achieve a better outcome.
Aim: The purpose of this study was to check if early mobilization is effective following total hip replacement surgery.
Methods: A prospective observational study was carried out at PIMS Hospital Islamabad between may 2023 and april 2024 Researchers examined a group of patients who underwent total hip replacement surgery and numbered 84. Patients were told to start moving again within 24 to 48 hours following their procedure. The outcomes, duration of hospital stay and rate of developing complications were recorded and studied.
Results: Enhanced scores for mobility and range of motion showed that early mobilization after THR helped people recover faster than those who did not receive such care. Patients stayed in the hospital for less time and deep vein thrombosis and lung infections after surgery happened less frequently.
Conclusion: Overall, early movement after hip surgery helped people get better faster, were discharged sooner and experienced fewer postoperative complications. It is advised to use early mobilization protocols to help patients recover well after THR.
Keywords: Total hip replacement, early mobilization, functional recovery, postoperative complications, orthopedic surgery.

INTRODUCTION:

Many cases of osteoarthritis, rheumatoid arthritis, avascular necrosis and serious trauma to the hip have been effectively treated with a total hip replacement (THR) surgery. Over the years, THR has become a usual way for orthopedic care to help those suffering from pain, recover their movement and live better lives. Even with recent surgery improvements, recovery after an operation is still important to enhance patient results, avoid complications and save on hospital stays [1]. Clinicians and experts have noticed that early mobility following THR surgery is crucial in aiding recovery and has attracted more notice. Early mobilization means starting to move around and exercise with no wait, unlike extended bed rest. In the past, people undergoing THR were instructed to stay as still as possible for a long time to protect the site and avoid complications near the wound. Still, multiple studies found that early mobilization may help people recover better, have fewer complications and return to independence sooner [2]. So, postoperative rehabilitation programs changed to urge patients to start moving and walking as soon as their medical condition allowed.

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Previously, it was documented that early activity after THR was beneficial. Many studies have shown that it lowers the chances of blood clots in the veins (DVT), lung clots (PE), reduced muscle mass and pressure ulcers. Letting patients walk and bear weights soon after craniotomy increased blood circulation, strengthened muscles and helped prevent deep vein blood clots [3]. Those patients who began therapy after surgery experienced less pain and greater joint mobility than those who had postponed therapy. Increased momentary pain control was a result of endorphins being released and swelling being lessened by better blood flow.

In other words, getting patients up and moving early meant they recovered slowly and could leave the hospital faster. Those who received early mobilization reported more independence and were generally happier with their treatment after surgery [4]. It was especially important for these enhancements in elderly people, because staying in bed for a long time can weaken their muscles, raise their risk of falling and negatively affect their overall health.

The benefits of early mobilization were seen, but plenty were concerned about safety and feasibility. A number of clinicians believed that getting patients to walk early after surgery might raise the danger of their prosthetic becoming dislodged, their wound opening or slow healing. Because of these worries, the way rehabilitation was carried out was not harmonized among institutions [5]. When choosing when and how to mobilize the patient, surgeons often used what they preferred, the patient's medical history and the surgical type. Even so, increasing proof showed that using standard early mobilization could lead to better outcomes.

In addition, improvements in surgery and anesthesia made it possible for patients to start moving early after their procedure. Because of new, small incision methods, upgraded implant designs and improved pain control with regional anesthesia and several analgesics, patients had less trauma and more rapid recovery [6]. As a result, patients were more comfortable with the first therapy sessions which also increased the benefits from moving early.

As a result, researchers have studied whether early mobilization improves results after total hip replacement. The evidence usually supports that it reduces complications, improves clinical outcomes and results in better patient satisfaction. Even so, concerns about the ways the tests are done and safety kept needing further attention. The main objective was to judge whether early movement helps patients recover quicker after a THR [7].

MATERIALS AND METHODS:

The department of Orthopedics in the Pakistan Institute of Medical Sciences (PIMS) Hospital in Islamabad was the site for this prospective observational study. The research studied the effectiveness of early movement for patients having a total hip replacement (THR) to see if they improved their recovery. From may 2023 and april 2024, the study was carried out for a period of twelve months.

Eighty-four patients who underwent planned hip replacement surgery within the mentioned period were part of the study group. A non-probability consecutive sampling method was used to select the participants. Only men and women between 40 and 75 years old with advanced hip joint damage from osteoarthritis, avascular necrosis or rheumatoid arthritis who were due for primary total hip replacement were eligible for this study. Patients who had revision surgery, had serious memory loss or after their surgery developed an infection or thromboembolic event were excluded from this study.

Patients were assigned to one of two groups after they were given consent and the hospital's approval was granted. Group A consisted of patients who were encouraged to move after no more than 24 hours following their surgery. The standard care group, called Group B, included patients who began moving again after the first two days. Patients qualified as mobilized if they could stand, walk with a device or assistance and partake in therapy activities under a trained physiotherapist.

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ISSN / eISSN: 2434-9186 / 2434-9194
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All surgeries were done by experienced surgeons using the same spinal procedure under either spinal or general anesthesia. Surgery patients received the same steady care for their wounds, pain relief and anticoagulation after surgery as a control for variables that might interfere with results. Based on physiotherapy guidance, both groups received steps designed to support their weight, balancing abilities and the movement range of their ankles up to their personal thresholds.

Medical teams kept track of outcome measures three times: after surgical day 3, discharging each patient and again four weeks after the operation. Outcomes measured in this study were pain levels (as shown on the Visual Analog Scale), length of time spent in hospital, incidence of complications (such as deep vein thrombosis and joint stiffness) and how well patients could move (using the Harris Hip Score). Other outcomes examined were how happy patients were and how soon they walked independently.

Data were gathered from both proformas and hospital records. The statistical analysis used SPSS version 25. Age, pain scores and hospital stay duration were shown as means and standard deviations and gender and the presence of complications were given as frequencies and percentages. A t-test was performed on continuous variables and a chi-square test was done to study categorical variables. A p-value smaller than 0.05 was understood as statistically significant.

Throughout the study, no patient data was made public and every participant could withdraw from the trial at any stage with no effect on their care. The aim of this study was to help guide how mobilization should be carried out after undergoing a total hip replacement surgery.

RESULTS:

A total of 84 patients who had undergone THR surgery at PIMS Hospital Islamabad from May 2024 to April 2025 were included in this study. Two groups were created in the study: the early mobilization group (42 patients) started moving within 24 hours of the surgery and the standard mobilization group (also 42 patients) started later, after 48 hours. Functional recovery scores, the time spent in the hospital, the rate of complications following surgery and patient satisfaction were used to see if early mobilization was effective.

Table 1: Comparison of Functional and Clinical Outcomes Between Early and Standard Mobilization Groups:

Outcome Measure	Early Mobilization Group (n=42)	Standard Mobilization Group (n=42)	p-value
Mean Harris Hip Score at 6 Weeks	85.3 ± 6.5	76.8 ± 7.1	<0.001
Mean Length of Hospital Stay (days)	4.1 ± 1.2	6.3 ± 1.4	<0.001
Incidence of DVT (%)	2 (4.8%)	6 (14.3%)	0.042
Incidence of Pulmonary Infection (%)	1 (2.4%)	5 (11.9%)	0.046
Wound Infection Rate (%)	1 (2.4%)	2 (4.8%)	0.556

Table 2: Patient Satisfaction Scores at 6 Weeks Postoperatively:

Satisfaction Parameter	EMG (n=42)	SMG (n=42)	p-value
Very Satisfied (%)	30 (71.4%)	19 (45.2%)	0.009
Satisfied (%)	10 (23.8%)	16 (38.1%)	0.204

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Neutral (%)	1 (2.4%)	5 (11.9%)	0.093
Dissatisfied (%)	1 (2.4%)	2 (4.8%)	0.556

Researchers found that early movements helped patients recover faster and easier after total hip replacement surgery. In Table 1, the group that began early rehabilitation recovered more quickly, as seen by their higher mean Harris Hip Score at 6 weeks (85.3 ± 6.5) and lower standard mobilization group Harris Hip Score (76.8 ± 7.1), with a p-value of <0.001. Patients who began moving soon after the operation were able to use their joints more quickly.

Stay in the hospital was also taken into consideration. The patients in the EMG hospitalized for 4.1 ± 1.2 days, on average, while patients in the SMG stayed longer for 6.3 ± 1.4 days. By being mobilized faster, early mobilization patients seemed to recover more quickly and could save both healthcare providers and patients money.

All postoperative events, including complications, were also looked at. Deep vein thrombosis (DVT) occurred less often in the EMG group (4.8%) than in the SMG group (14.3%) and the difference was significant (p=0.042). EMG patients had less pulmonary infections by comparison (2.4%) which was significant compared to SMG (11.9%). From these observations, it was thought that early movement helped patients' hearts and lungs recover faster and may reduce stasis and expand lung tissue. Even so, the infection rates in surgical sites were not influenced by early mobilization.

Patient satisfaction was measured at the 6-week follow-up which is the main focus of Table 2. There were significantly more patients in the EMG who said they were "very satisfied" (71.4%) than in the SMG (45.2%), according to the p-value of 0.009. The shares of "satisfied" patients in the SMG (38.1%) were nearly double those in the EMG (23.8%), but this difference was not significant statistically (p = 0.204). Even though a larger number of SMG patients felt almost neutral or quite dissatisfied, the difference was not significant. All in all, delaying surgery appeared to bring lower scores for patients in areas such as comfort, how they used their bodies and the benefits they thought they would receive.

DISCUSSION:

The goal was to examine how early mobilization affects the outcome, healing and side effects experienced after a patient has THR. Results demonstrated that starting mobilization so soon after surgery was very valuable for functional improvement, quickened recovery, shortened time spent in the hospital and lowered the chances of complications, including those in the lungs and blood clots.

Those who were encouraged to get up and move after surgery felt less pain, had better joint use and were more independent in their daily activities [8]. This finding aligns with past work that mentioned how early movements benefit blood circulation, stop muscle weakening and improve mental health in patients. Walking early after surgery led to greater patient satisfaction and faster recovery to normal mobility, supporting a better path of rehabilitation.

Patients who began early mobilization had better performance on health tests such as the Timed Up and Go (TUG) test and the Harris hip score than those who had delayed mobilization [9]. As a result, early exercise helped patients regain their strength and improve their nerve responses. The role in improving how people walk and strengthening muscle tissues reminded the researchers of the value of beginning rehab quickly after surgery.

It was found that those who started moving early had a much quicker time in the hospital. The consequence for healthcare was improved efficiency, since fewer patients stayed overnight and the same resources were now used more efficiently. Patients who were discharged earlier were likely to use outpatient or home rehabilitation services, keeping care going and supporting patient independence [10]. Reduced postoperative complications were also found in the group that was mobilized earlier. DVT,

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respiratory and urinary tract infections occurred much less often among the group that practiced medicine. This is possibly because early exercise improves blood flow and lung function. The results showed that moving the body helps people recover and, importantly, prevents the many health problems that long-term bed rest brings [11].

In spite of the proven value, it was seen that some barriers to early mobilization were present such as pain, fear of movement and things like having not enough staff or no physiotherapy staff available on weekend shifts. Even so, these obstacles were usually reduced by using different medicines, guiding patients and sticking to proper mobilization rules [12].

Older patients and those with additional medical issues improved from early moving around, but their improvement was a bit slower. As a result, it appeared that starting early rehabilitation was practical and helpful for various patient groups if each patient had their own rehab goals and needed extra care [13].

Results from the research matched up with the recommendations of ERAS, suggesting initiating interventions soon after surgery to improve outcomes more quickly. By including early mobilization in regular treatment plans, surgeons, nurses, physiotherapists and occupational therapists could all be part of the treatment team [14].

Discoveries showed that early rehabilitation after total hip replacement surgery helped patients heal faster, lowered risks of complications and brought about better patient results. These outcomes agreed that doctors should continually use early getting-up strategies in patients' post-operation plans. More investigation is needed to discover the best rehabilitation strategies and assess the long-term results of early therapy, mainly in groups perceived as high-risk [15].

CONCLUSION:

Early assistance in standing led to faster progress, lower risks of complications and better overall functions after a hip replacement. Mobilizing patients in the 24- to 48-hour window after surgery was linked to better muscle abilities, greater ability to move and less time spent in the hospital than in delayed mobilization. We found that standing and walking soon after surgery lowered the chances of deep vein thrombosis, breathing difficulties and joint stiffness. Results demonstrated that satisfaction with care and improvement in quality of life were both seen in patients undergoing rehabilitation. All in all, moving early helped to protect patients from complications and permitted a higher level of postoperative recovery as well as an earlier return to normal life. It was stressed from these results that starting movement exercises early should be part of standard care after total hip surgery.

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