
Psychological Outcomes Following Bipolar Hemiarthroplasty for Displaced Intracapsular Fracture Neck of Femur in Elderly Patients: A Review of Rehabilitation, Quality of Life, and Functional Recovery

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Abstract

Displaced intracapsular fracture of the femoral neck is a common orthopedic injury in the elderly and is associated with substantial physical disability, psychological morbidity, and reduced quality of life. Bipolar hemiarthroplasty is widely used for the surgical management of displaced femoral neck fractures because it facilitates early mobilization, pain relief, and restoration of functional independence. However, psychological recovery following surgery has received comparatively less attention than physical rehabilitation. Elderly patients frequently develop depression, anxiety, fear of falling, social isolation, and loss of confidence after hip fracture, and these psychological factors significantly influence rehabilitation outcomes and long-term functional recovery. This review examines the relationship between bipolar hemiarthroplasty, postoperative rehabilitation, psychological well-being, and quality of life in elderly patients. Current evidence indicates that successful restoration of mobility, reduction of pain, early weight-bearing, and recovery of activities of daily living are associated with improvements in emotional health, social participation, and life satisfaction. Psychological assessment and multidisciplinary rehabilitation should therefore be integrated into postoperative care to optimize overall recovery and promote long-term independence.

Keywords: Bipolar hemiarthroplasty, femoral neck fracture, psychological rehabilitation, depression, anxiety, quality of life, elderly, functional recovery.

Introduction

Hip fractures represent one of the most serious musculoskeletal injuries affecting older adults and are associated with considerable morbidity, mortality, and healthcare expenditure. Among these injuries, displaced intracapsular fractures of the femoral neck frequently require surgical intervention because of the high risk of non-union and avascular necrosis of the femoral head.

Bipolar hemiarthroplasty is commonly performed in elderly patients because it allows early mobilization, immediate weight-bearing in many cases, and satisfactory functional outcomes.

The consequences of hip fracture extend beyond the skeletal system. For many elderly individuals, a hip fracture is a major life event that results in sudden dependence, hospitalization, surgery, and disruption of social and family roles. These experiences frequently lead to psychological distress, including depression, anxiety, fear of falling, reduced self-esteem, and loss of independence. Mental health problems after hip fracture are increasingly recognized as important determinants of rehabilitation success, functional recovery, institutionalization, and mortality.

Recent research has demonstrated that depression and anxiety are common after hip fracture surgery and are associated with poorer mobility, lower quality of life, increased pain, and delayed rehabilitation. Therefore, psychological recovery should be considered an essential component of comprehensive postoperative care. This review explores the psychological outcomes following bipolar hemiarthroplasty for displaced intracapsular femoral neck fractures, with particular emphasis on rehabilitation, functional recovery, and quality of life.

Psychological Impact of Hip Fracture in the Elderly

The psychological response to hip fracture is often immediate and profound. Elderly patients frequently experience emotional trauma because of the sudden loss of mobility and fear of permanent disability. Hospitalization and surgery may further contribute to psychological stress, particularly in patients with pre-existing comorbidities or cognitive impairment.

Depression

Depression is among the most common psychiatric complications after hip fracture. A substantial proportion of elderly patients develop depressive symptoms during the postoperative period, and some continue to experience depression for several months. Depression reduces motivation, limits participation in physiotherapy, and negatively affects adherence to rehabilitation programs. Patients with depressive symptoms are less likely to regain pre-fracture mobility and independence. Depression has also been associated with increased mortality and poorer long-term functional outcomes after hip fracture.

Anxiety

Anxiety commonly occurs during both the preoperative and postoperative periods. Patients may fear surgical complications, persistent pain, recurrent falls, and loss of independence. Anxiety can increase pain perception, interfere with sleep, reduce confidence during mobilization, and contribute to activity avoidance. Persistent anxiety has been associated with poorer functional recovery and reduced quality of life after hip fracture surgery.

Fear of Falling

Fear of falling is a particularly important psychological barrier during rehabilitation. Even after successful surgery, many patients remain reluctant to bear weight or walk independently because they fear another fall and fracture. This fear may lead to reduced physical activity, muscle deconditioning, impaired balance, and prolonged dependence on caregivers.

Social Isolation and Loss of Independence

Hip fracture often disrupts social participation and family interactions. Many elderly patients become dependent on family members for activities of daily living, leading to feelings of helplessness, guilt, and reduced self-worth. Social withdrawal and loneliness may further worsen depressive symptoms and negatively affect rehabilitation outcomes.

Bipolar Hemiarthroplasty and Functional Recovery

The primary objective of bipolar hemiarthroplasty is to restore mobility and reduce pain while allowing early rehabilitation. Compared with prolonged immobilization or failed internal fixation, successful hemiarthroplasty provides several advantages that may positively influence psychological recovery.

Pain Relief

Persistent postoperative pain is strongly associated with depression, anxiety, sleep disturbance, and reduced quality of life. Effective pain relief following bipolar hemiarthroplasty enables patients to participate more actively in physiotherapy and daily activities, thereby improving confidence and emotional well-being.

Early Mobilization

Early mobilization is one of the most important determinants of successful rehabilitation. Patients who begin standing and walking soon after surgery generally experience greater confidence,

reduced fear, and improved motivation. Early mobilization also reduces complications associated with prolonged bed rest, including pneumonia, deep vein thrombosis, pressure ulcers, and muscle wasting.

Restoration of Walking Ability

Recovery of walking ability is closely linked to psychological well-being. Patients who regain independent or assisted ambulation report greater confidence, improved social participation, and enhanced life satisfaction. The ability to move independently within the home and community is often associated with a significant improvement in emotional health.

Relationship Between Functional Recovery and Mental Health

Functional recovery and psychological well-being have a bidirectional relationship. Improvement in physical function frequently leads to better mental health, while psychological resilience enhances participation in rehabilitation and functional recovery.

Activities of Daily Living

Independence in activities such as dressing, bathing, toileting, transferring, and household mobility contributes substantially to psychological recovery. Regaining these abilities reduces caregiver dependence and improves self-efficacy. Functional independence allows patients to resume meaningful social and family roles, thereby enhancing emotional well-being.

Self-Esteem and Confidence

Achievement of rehabilitation milestones often improves self-esteem and confidence. Standing independently, walking without assistance, climbing stairs, and performing household activities provide patients with a sense of accomplishment and control over their recovery.

Social Participation

Restoration of mobility enables elderly patients to participate in family gatherings, community events, religious activities, and social interactions. Increased social participation reduces loneliness and promotes psychological resilience.

Quality of Life After Bipolar Hemiarthroplasty

Quality of life encompasses physical health, psychological well-being, social relationships, and functional independence. Most studies report significant improvements in health-related quality of life following successful bipolar hemiarthroplasty.

Physical Well-being

Reduced pain, improved mobility, enhanced balance, and greater independence contribute to better physical functioning. Patients who regain community ambulation generally report higher quality-of-life scores than those who remain functionally dependent.

Psychological Well-being

Improvements in mood, confidence, emotional stability, and life satisfaction are commonly observed after successful rehabilitation. Reduction of depressive symptoms is often associated with improved mobility and functional independence.

Social Well-being

The ability to resume social activities and maintain interpersonal relationships contributes significantly to overall quality of life. Family support and community participation play important roles in psychological recovery among elderly patients.

Cultural Considerations in the Indian Context

Cultural factors significantly influence rehabilitation goals and psychological outcomes in India. Many elderly individuals consider activities such as sitting cross-legged, squatting, participating in religious rituals, and attending social ceremonies to be important components of daily life. Inability to perform these activities may result in feelings of inadequacy and social exclusion.

Restoration of culturally meaningful functions may therefore have substantial psychological benefits. Rehabilitation programs should incorporate culturally relevant functional goals whenever clinically appropriate, as these may improve motivation, satisfaction, and perceived recovery.

Psychological Assessment During Rehabilitation

Routine psychological assessment should be incorporated into postoperative rehabilitation programs. Early identification of depression, anxiety, fear of falling, and cognitive impairment allows timely intervention and may improve rehabilitation outcomes.

Commonly used assessment tools include:

- Geriatric Depression Scale (GDS)
- Hospital Anxiety and Depression Scale (HADS)
- Falls Efficacy Scale (FES)
- WHOQOL-BREF
- Short Form-36 (SF-36)
- Barthel Index

Regular psychological screening enables individualized rehabilitation planning and appropriate referral for mental health support.

Multidisciplinary Rehabilitation

Optimal recovery following bipolar hemiarthroplasty requires collaboration among multiple healthcare professionals.

Physiotherapy

Physiotherapists play a central role in improving gait, balance, muscle strength, endurance, and functional independence. Progressive mobilization and balance training may also reduce fear of falling.

Occupational Therapy

Occupational therapists help patients adapt to activities of daily living, improve home safety, and regain functional independence.

Psychological Support

Psychologists and psychiatrists can provide counseling, cognitive behavioral therapy, fear-of-falling management, relaxation techniques, and treatment of clinically significant depression or anxiety when indicated.

Family Involvement

Family support is particularly important in elderly rehabilitation. Education regarding mobilization, fall prevention, emotional support, and encouragement can substantially improve rehabilitation adherence and psychological recovery.

Future Directions

Despite increasing recognition of psychological outcomes after hip fracture, several important research gaps remain. Future studies should evaluate long-term psychological recovery after bipolar hemiarthroplasty, identify predictors of resilience, develop culturally appropriate quality-of-life measures, assess integrated psychological rehabilitation programs, and determine the effectiveness of interventions targeting depression and fear of falling.

Prospective multicenter studies with standardized psychological outcome measures are needed to establish evidence-based rehabilitation protocols.

Conclusion

Psychological recovery is a critical component of successful treatment following displaced intracapsular fracture of the femoral neck in elderly patients. Bipolar hemiarthroplasty contributes not only to pain relief and restoration of mobility but also to improvements in confidence, emotional well-being, social participation, and quality of life. Depression, anxiety, fear of falling, and loss of independence significantly influence rehabilitation outcomes and should be routinely assessed during postoperative care. Early mobilization, functional rehabilitation, family support, and psychological intervention should be integrated into a multidisciplinary rehabilitation model. Such an approach has the potential to optimize both physical and psychological recovery and promote long-term independence and successful aging after hip fracture surgery.

References (Vancouver style)

1. Rogmark C, Leonardsson O. Hip arthroplasty for the treatment of displaced fractures of the femoral neck in elderly patients. *Bone Joint J.* 2016;98-B(3):291-7.

2. Bhandari M, Devereaux PJ, Tornetta P III, Swiontkowski MF, Berry DJ, Haidukewych G, et al. Operative management of displaced femoral neck fractures in elderly patients. *J Bone Joint Surg Am.* 2005;87(9):2122-30.
3. Parker MJ, Gurusamy KS. Internal fixation versus arthroplasty for intracapsular proximal femoral fractures in adults. *Cochrane Database Syst Rev.* 2006;(4):CD001708.
4. Alexiou KI, Roushias A, Varitimidis SE, Malizos KN. Quality of life and psychological consequences after hip fracture in elderly patients. *Injury.* 2018;49(2):195-201.
5. Lenze EJ, Munin MC, Skidmore ER, et al. Onset of depression in elderly persons after hip fracture: implications for prevention and early intervention. *J Am Geriatr Soc.* 2007;55(1):81-6.
6. Mossey JM, Knott KA, Craik R. The effects of persistent depressive symptoms on hip fracture recovery. *J Gerontol.* 1990;45(5):M163-8.
7. Dyer SM, Crotty M, Fairhall N, et al. A critical review of the long-term disability outcomes following hip fracture. *BMC Geriatr.* 2016;16:158.
8. Beaupre LA, Jones CA, Saunders LD, Johnston DWC, Buckingham J, Majumdar SR. Best practices for elderly hip fracture patients: a systematic overview of the evidence. *J Gen Intern Med.* 2005;20(11):1019-25.
9. Shyu YI, Liang J, Tseng MY, et al. Comprehensive care improves health outcomes among elderly patients with hip fracture. *J Gerontol A Biol Sci Med Sci.* 2010;65A(8):813-20.
10. Yesavage JA, Brink TL, Rose TL, et al. Development and validation of a geriatric depression screening scale. *J Psychiatr Res.* 1982-83;17(1):37-49.
11. Zigmond AS, Snaith RP. The Hospital Anxiety and Depression Scale. *Acta Psychiatr Scand.* 1983;67(6):361-70.
12. World Health Organization. WHOQOL-BREF: Introduction, administration, scoring and generic version of the assessment. Geneva: WHO; 1996.