



The Effect of Depression on Functional Mobility in Older Adults Following Hip Fracture Surgery: A Systematic Review



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INTRODUCTION / PURPOSE

In the United States there are approximately 2.8 million falls per year.¹ Risk factors for falls include: muscle weakness, history of falls, impaired balance, visual impairment, arthritis, impaired activities of daily living, depression, cognitive deficits, and age 80 years and older.¹ At least 350,000 older adults are hospitalized for hip fractures per year, with at least 95% resulting from a fall.¹ The mortality rate following a hip fracture is 33% and it is estimated that 50% of persons that sustain a hip fracture will never return to their prior level of function. Depression is a risk factor for falls and more than 2 million older adults in the United States are diagnosed with depression.² Therefore, the purpose of this review was to determine the effect of depression on functional mobility in older adults following hip fracture surgery.

METHODS

A literature search of PubMed, SAGE, CINAHL, and ProQuest was conducted using search terms: elderly OR older adult, AND depression, AND hip fracture. Search limits: English language, human subjects, and peer reviewed (2006-2016). Selection criteria: adults 60+ years who sustained hip fracture, underwent surgical repair, received post-op physical therapy, and were assessed for depression at minimum using the Geriatric Depression Scale (GDS) or Center for Epidemiological Studies Depression Scale (CES). Two reviewers independently assessed each study for methodological quality and consensus based on MINORS criteria.

MINORS Scores

| Article | MINORS | Average |
|-------------------------------|--------|---------------------------------------|
| Williams et al ⁴ | 13 | Noncomparative = 12.2 / 16 |
| Fredman et al ⁵ | 11 | |
| Philips et al ⁶ | 11 | |
| Piscitelli et al ⁷ | 13 | |
| Givens et al ⁸ | 13 | Comparative = 19.33 / 26 |
| Feng et al ³ | 19 | |
| Voshaar et al ⁹ | 17 | |
| Matheny et al ¹⁰ | 22 | |

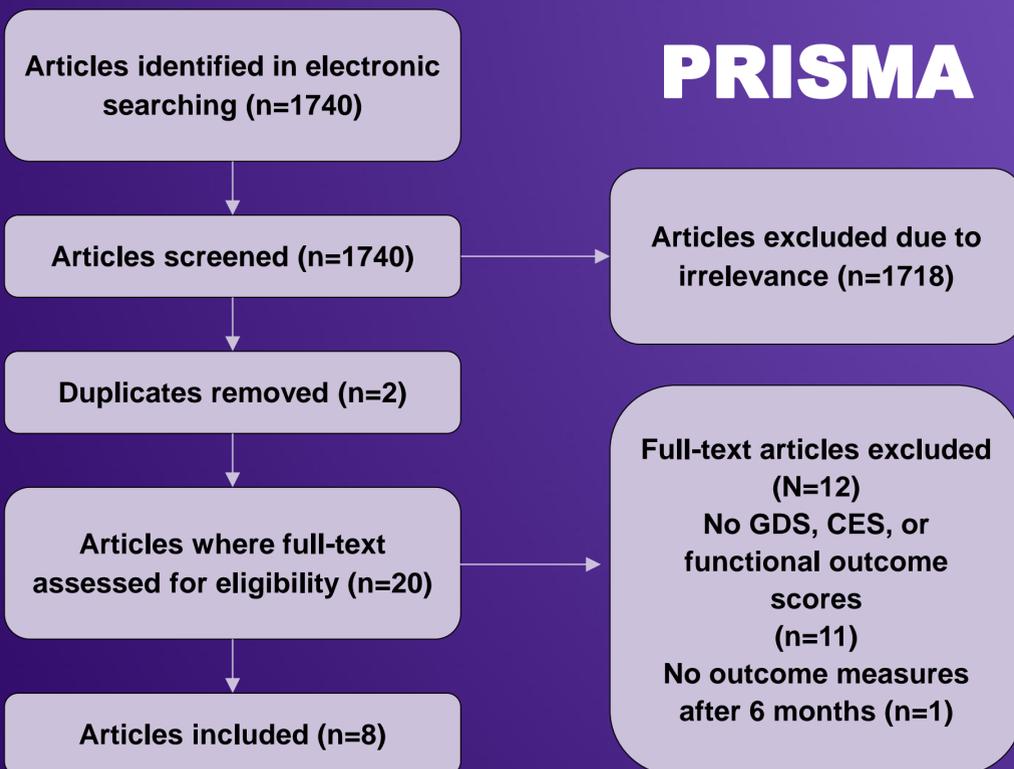
CONCLUSIONS

Moderate evidence suggests that depression in older adults after hip fracture surgery decreases functional mobility and increases fall risk. Depression was identified as early as 1 week post-op with duration of a year or greater. Impaired cognition and pain negatively impacted outcomes to a greater extent. Limitations included diverse outcome measures and heterogeneity of study methods. Future research should focus on assessment of depression and functional mobility using standardized outcome measures as well as determining the potential impact of exercise.

CLINICAL RELEVANCE

Depressive symptoms are prevalent (~40%) and may persist over a year following hip fracture surgery, further impacting return to functional independence. Depression may also correlate with impaired balance in a population that already demonstrates a high fall risk. In addition to early identification of post-op pain, anxiety, and subjective symptoms, clinicians should consider use of the GDS or CES as valid, self-report measures that take 5 minutes to complete. Following hip fracture, early identification of depression and referral for psychological evaluation or counseling as part of a post-op plan of care may be beneficial in decreasing depression and maximizing functional mobility in older adults.

PRISMA



RESULTS

- Sample size ranged from 55-804 subjects (n=1774)
- Outcomes included:
 - Depression, pain, cognition, and delirium assessments^{3,7,8}
 - Ambulation time and distance^{3,5-9}
 - Balance^{6,9}
 - Activities of daily living^{3,6,8}
- Depression was reported as early as 1 week post-op
 - Lasted through 6 or 12 month follow-up (4 articles)^{4,6,9,10}
 - Significantly negative impact on ambulation time and distance (6 articles)^{3,5-9}, and ADL completion (5 articles)^{3,8}
- Increased pain correlated with depressive symptoms (2 articles)^{4,9}
- Significant decrease in function (1 article)⁹
- Cognitive impairment, comorbidities, and delirium correlated with negative functional outcomes (3 articles)^{3,7,8}
- Higher fall risk in persons with depression
 - Significantly lower Berg Balance Scores (1 article)⁶
 - Increased Timed Up and Go times (2 articles)^{6,9}

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