



Unsupervised Home Exercises vs. Formal Physical Therapy After Total Hip Arthroplasty: A Systematic Review

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INTRODUCTION

Historically, postoperative exercise and physical therapy (PT) has been viewed as crucial to a successful outcome following primary total hip arthroplasty (THA). This systematic review and meta-analysis aimed to assess differences in both short- and long-term objective and self-reported measures between primary THA patients with formal supervised PT versus unsupervised home exercises after discharge.

METHODS

- 6 electronic databases searched from inception to 12/14/2020
- Identified RCTs comparing changes from baseline between supervised and unsupervised PT after primary THA with the following outcomes:
 - Lower extremity strength
 - Aerobic capacity
 - Self-reported physical function
 - Self-reported quality of life
- Outcomes separated into short- (<6mo from surgery) and long-term (≥6mo from surgery) measures
- Meta-analyses performed when possible, reported in standardized mean differences (SMD) with 95% confidence intervals (CI)

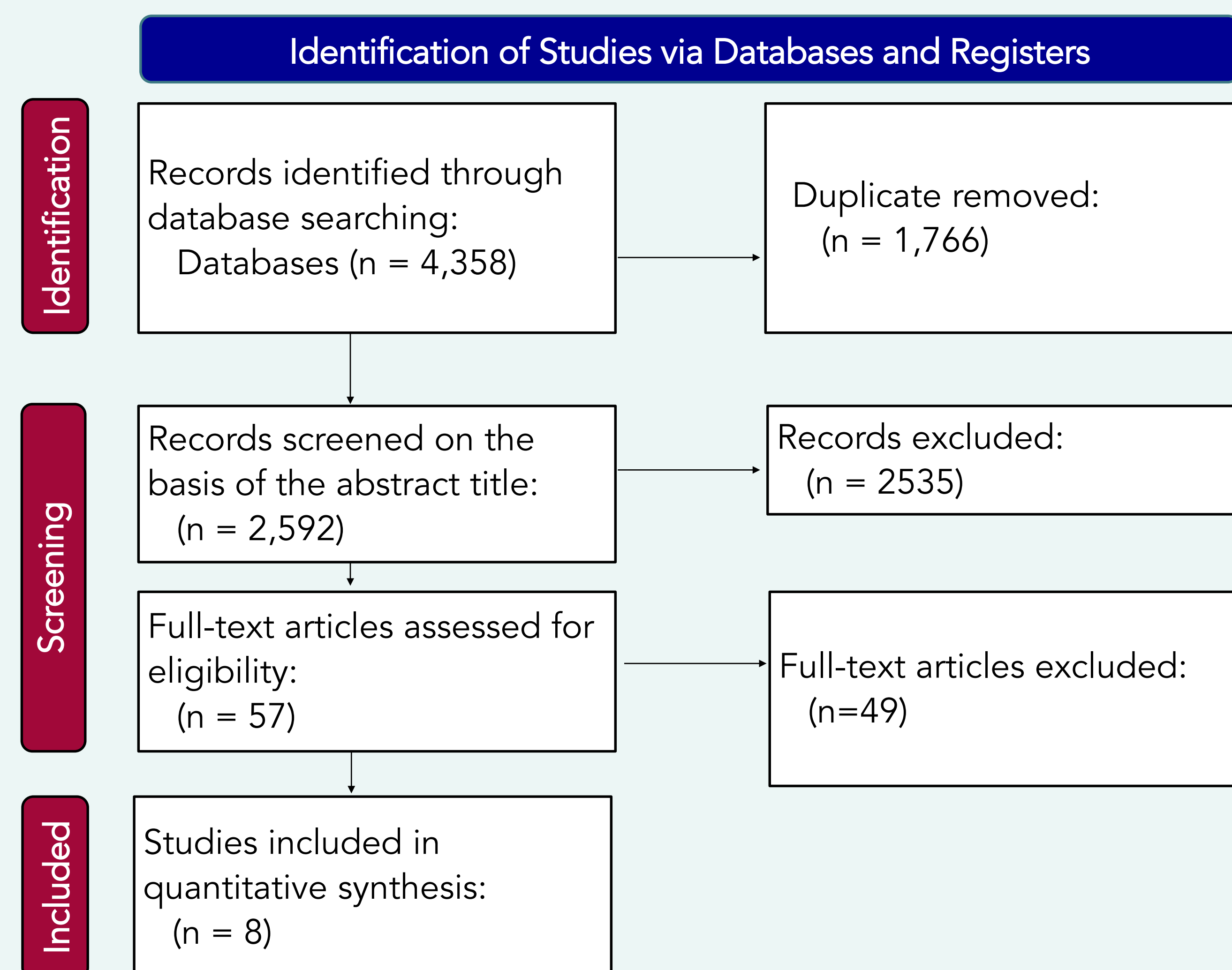


Figure 1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow chart

RESULTS

Eight studies (N=428) were included for review. No significant differences were observed with regards to lower extremity strength (p=0.85), aerobic capacity (p=0.98), or short-term quality of life scores (p=0.18). Although patients in supervised PT demonstrated improved short-term self-reported outcomes compared to those performing unsupervised exercises, this was represented by a small effect size (SMD 0.23 [95% CI, 0.02-0.44]; p=0.04). No differences were observed between groups regarding long-term lower extremity strength (p=0.53), physical outcome scores (p=0.37), or quality of life (p=0.14).

Table 1: Summary of Findings

| Outcome | Supervised Participants (n) | Unsupervised Participants (n) | SMD/MD (95% CI) | Risk of Bias | Certainty of Evidence |
|---|-----------------------------|-------------------------------|------------------------------------|---------------|-----------------------|
| LE Strength Short Term | 142 (5) | 121 (5) | -0.04 (-0.50, 0.41) ^a | Some concerns | Low ⊕⊕○○ |
| LE Strength Long Term | 126 (5) | 111 (5) | -0.10 (-0.43, 0.22) ^a | High | Low ⊕⊕○○ |
| Aerobic Capacity Short Term | 54 (3) | 49 (3) | -0.50 (-36.88, 35.89) ^b | Some concerns | Low ⊕⊕○○ |
| Self-Reported Physical Outcome Short Term | 176 (6) | 169 (6) | 0.23 (0.02, 0.44) ^a | High | Low ⊕⊕○○ |
| Self-Reported Physical Outcome Long Term | 133 (4) | 126 (4) | 0.11 (-0.13, 0.36) ^a | High | Low ⊕⊕○○ |
| Self-Reported QoL Short Term | 176 (6) | 166 (6) | 0.15 (-0.07, 0.36) ^a | High | Low ⊕⊕○○ |
| Self-Reported QoL Long Term | 133 (4) | 126 (4) | 0.19 (-0.06, 0.43) ^a | High | Low ⊕⊕○○ |

SMD: Standardized Mean Difference, MD: Mean Difference, CI: Confidence Interval, QoL: Quality of Life, LE: Lower Extremity

^aStandardized Mean Difference

^bMean Difference

DISCUSSION & CONCLUSION

- Supervised PT provides no clinically significant benefit over unsupervised exercises following primary THA
- Small benefit in short-term self-reported physical outcome scores driven by one single study with delayed intervention
- Cost and logistics associated with PT are legitimate sources of concern for patients after discharge
- Little benefit and substantial cost should encourage providers to reconsider the routine use of supervised PT after discharge

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