

A pedalling-based protocol was superior to standard physiotherapy for post-operative rehabilitation after total knee replacement in a randomised controlled trial

Sattler, Larissa Nicole; Hing, Wayne A; Vertullo, Christopher

Licence:
Free to read

[Link to output in Bond University research repository.](#)

Recommended citation(APA):

Sattler, L. N., Hing, W. A., & Vertullo, C. (2019). *A pedalling-based protocol was superior to standard physiotherapy for post-operative rehabilitation after total knee replacement in a randomised controlled trial*. 254. TRANSFORM 2019 Physiotherapy Conference, Adelaide, South Australia, Australia.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

For more information, or if you believe that this document breaches copyright, please contact the Bond University research repository coordinator.

A PEDALLING-BASED PROTOCOL WAS SUPERIOR TO STANDARD PHYSIOTHERAPY FOR POST-OPERATIVE REHABILITATION AFTER TOTAL KNEE REPLACEMENT IN A RANDOMISED CONTROLLED TRIAL

Sattler L^{1,2}, Hing W¹, Vertullo C^{1,2,3}

¹Bond University, Robina, Australia, ²Pindara Private Hospital, Benowa, Australia, ³Knee Research Australia, Benowa, Australia

Aim: To determine if a self-directed pedalling protocol following total knee replacement surgery was superior to standard multi-exercise non-pedalling physiotherapy.

Design: Randomised controlled trial with concealed allocation, assessor blinding and intention-to-treat analysis.

Method: Sixty TKR patients were randomized to receive postoperative physiotherapy involving either a 3-exercise pedalling-based (3-Ex-Pedal-Group) or a standard 10-exercise, non-pedalling protocol (10-Ex-NonPedal-Group). Outcomes were assessed at 2 days, 2 weeks, and 4 months, and included tests of function, patient-reported outcomes, and other perioperative measures.

Results: For the primary outcome, the 6-minute walk test, distance walked was further in the 3-Ex-Pedal-Group at 2 days ($p = 0.001$). The 10-m walk (10MWT) and the Timed Up & Go (TUG) tests, were faster for the 3-Ex-Pedal-Group at 2 days ($p = 0.016$, $p = 0.020$). Oxford Knee Scores were better in the 3-Ex-Pedal-Group at 2 days ($p = 0.034$) and at 2 weeks ($p = 0.007$), as was the EQ-5D score at 2 weeks ($p = 0.037$). The EQ-5D-VAS was better for the 3-Ex-Pedal-Group at all three time points ($p = 0.031$, $p = 0.050$, and $p = 0.044$). Length of stay was shorter, by a half-day, for the 3-Ex-Pedal-Group ($p = 0.024$). The 10-Ex-Nonpedal-Group was not superior for any outcome at any time point.

Conclusion: A pedalling-based protocol after TKR was superior to a standard multi-exercise physiotherapy protocol with these benefits decreasing over time.

Key Practice Points:

- An inexpensive and self-directed pedalling protocol is superior for patients than standard multi-exercise physiotherapy following total knee replacement surgery.

Proposed impact, if any, on the health outcomes of Aboriginal and Torres Strait Islander people:
As pedalling on a simple set of floor pedals is relatively inexpensive and can be done as a self-directed home program it would be an easily adopted protocol for those living in regional or remote areas.

HOW OSTEOARTHRITIS CHANGES KNEE KINEMATICS.

Galvin C^{1,2}, Perriman D^{1,2,3}, Pickering M⁴, Lynch J^{2,3}, Smith P^{2,3}, **Scarvell J**^{1,2}

¹University Of Canberra, Bruce, Australia, ²Trauma and Orthopaedic Research Unit, Canberra Health Services, Canberra, Australia, ³Australian National University Medical School, Canberra, Australia, ⁴University of New South Wales, Canberra, Australia

Aim: This research aims to compare the difference in kneeling kinematics in six-degrees-of-freedom for people with knee osteoarthritis.

Design: Cross-sectional observational study.