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

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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 to 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.

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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.