

INVESTIGATION OF A BLENDED REHABILITATION APPROACH IN FUNCTION AND PHYSICAL ACTIVITY LEVELS OF PATIENTS WITH KNEE OSTEOARTHRITIS: A RANDOMISED CONTROLLED TRIAL IMPLEMENTED IN STRUCTURALLY WEAK URBAN AREAS IN GREECE.

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Introduction

A great advantage of Web-based rehabilitation is that it can be performed at a self-determined time, and in a home-based environment and increases access in structurally weak areas. There is mounting evidence that orthopedic technology-assisted rehabilitation has a positive impact in KOA. However, there is a need for a blended program that encompasses physical and behavioral elements, with purposeful and flexible physical activity (PA), as well as interplay of self-management and healthcare support to enhance lifelong strategy changes and promote a good fit for the care of KOA.

Purpose

The investigation of a 6-week web-based rehabilitation program of exercise, advice enhanced with outdoor structured PA to manage pain and physical function in KOA patients compared to an outdoor PA program alone.

Methods

This was an exploratory, assessor-blinded, parallel group, 2-arm prospective randomised controlled trial. The protocol conformed to CONSORT guidelines. (ISRCTN12950684/27-09-2020). Ethics approval was granted by the Ethics Committee of the University of West Attica, Greece (49238/09-07-2020). Sixty patients were recruited from the community of West Attica, Greece, to support weak, relevantly neglected infrastructure and poorer financially resources this region holds. An introductory session was scheduled for all participants (both groups) to get familiarized with the webpage environment and agree the journey route of the outdoor walking program, appropriate for each participant.

Web-based and outdoor PA program (WB-OPA)

WB-OPA (based on ESCAPE-knee pain resources) involved an exercise-based (35-40 min) program to improve function by integrating exercise, education, and self-management strategies. In the introductory session individual passwords were provided in order to register and have access to the rehabilitation regime. Participants attended 12 sessions, for 6 weeks. Education included video information on OA related topics, i.e. ice, pacing etc. Thrice weekly a walk journey of 500-800m was prescribed

Methods

Usual care

Only general information on KOA from webpage and a walk journey within the community for 5 times/ week.

Outcomes

PROMs: Pain, Physical function KOOS, PA (via diary, LEAS, Baecke questionnaire) and SF-12, TSK

PBOMs: TUG Test, CRT

Results

A total of 44 participants were analyzed, including 22 participants in the WB-OPA (mean [SD] age, 65.1 [5.3] years; 15 [68.2%] women; 13 [59.0%] retired] mean [SD] BMI, 24,1 [5.5]) and 22 participants in the usual care group (mean [SD] age, 63.5 [5.6] years; 19 [86.3%] women; mean [SD] BMI, 23,9 [5.9]), 15 [68.2%] retired].

No between-group analysis of mean change from baseline to 6 weeks was shown in the KOOS subscales, however the WB-OPA group improved statistically significantly over the 12-week time in the KOOS subscales for pain ($F= 11.9$; $p < 0.001$) and symptoms ($F= 8.9$; $p < 0.005$). Statistically significant between-group differences were found for PA measures, with LEAS showing greater improvement for the intervention group at 6 weeks and preserved over the 12 weeks follow-up ($F= 7.3$; $p < 0.01$).

With regards to the PBOMs statistically significant differences between groups for the TUG test ($F= 4.8$; $p < .05$), the 30s CRT

($F=3.9$, $p < 0.05$) with the WB-OPA showing greater improvement. Both SF-12 physical and mental components showed statistically significant within-group improvements for the two groups at the 12 weeks follow-up ($F=9,9$; $p < 0.005$).

Discussion & Conclusions

The current study providing a blended approach of self-managed web-based exercise, consultation and prescribed PA, compared to usual encouragement of PA, showed statistically significant reduction in pain, PA levels and clinically meaningful improvement in physical performance clinical tests

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