Telerehabilitation versus face-to-face: a non-inferiority trial comparing the effects of a periodized circuit training for people with knee osteoarthritis

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Introduction

Remote rehabilitation, as the telerehabilitation, seems to be an effective way to minimize barriers to exercise for knee osteoarthritis (KOA) people. Thus, the aim of this study was to compare the effects of a periodized circuit training (PCT) applied via telerehabilitation with the same protocol applied in the face-to-face model on pain intensity and physical function of old people with KOA.

Materials and Methods

Twenty participants of both sexes, aged ≥60 years, reported persistent pain, and radiographically diagnosed with KOA (grades 2 and 3 on K/L), were randomly assigned with 1:1 allocation to PCT delivered by telerehabilitation (Telereab) group or PCT face-to-face (FtF) group. The FtF performed a 14-week PCT protocol supervised by a physical therapist, 3 times a week. The Telereab was submitted to the same exercise protocol, however, the exercises were performed asynchronous 3 times a week. The Telereab group followed the orientations to exercises through videos on a web-site, DVD or YouTube, and received periodic telephone calls. Participants were evaluated pre and post the 14-week intervention period. Pain intensity was measured using the visual analog scale (VAS, 0 to 10-cm) on which the participants were required to place a mark between the left (0) and right (10) side in order to characterize their most frequent pain intensity. The WOMAC questionnaire was used to assess physical function and severity of pain (score ranges from 0 to 96). The between-group differences for the post-treatment outcomes at 14-weeks were calculated using Mixed Linear Models using interaction terms of treatment group versus time.

Results

There were no significant differences between groups in any descriptive variables (age, sex and BMI). Additionally, no statistically significant difference was found for pain intensity (VAS) and physical function (WOMAC) at baseline and after 14-weeks of protocol ($p>0.05$). Both groups presented significant reductions in pain intensity and increase in physical function ($p<0.05$) between times.

Discussion

A 14-week periodized circuit training delivered by telerehabilitation is as effective as the presential method in improving pain intensity and physical function for old people with KOA.

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