

【Original Article】

Practicality and Effectiveness of a Non-face-to-face Exercise Intervention on Alleviation of Knee Pain: a Randomized Controlled Trial

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Abstract

Objective: The purpose of this randomized controlled trial was to clarify program compliance and to examine the effects of a non-face-to-face exercise intervention program on alleviation of knee pain.

Methods: Subjects were 150 community-dwelling, independent elderly people with slight knee pain who participated voluntarily in an exercise program sponsored by Nagoya city. They were randomly allocated to the intervention group (n=75) and control group (n=75). The intervention group received by postal mail a printed booklet explaining 4 types of exercises, which were mainly aimed at strengthening of the quadriceps and improving range of motion (ROM) of the knee joints. They were instructed to perform these exercises at home every day over 1 month. Knee pain scores (Western Ontario and McMaster Universities Osteoarthritis Index; WOMAC) were evaluated before and after the intervention period.

Results: The average implementation rate of all exercises was $87.1 \pm 15.9\%$ (average \pm SD) during the intervention period. Compared to the control group, the WOMAC scores improved significantly in the intervention group ($p < 0.0001$). The effect size of the intervention was 0.50 for the WOMAC scores.

Conclusions: These results showed the practicality and effectiveness of the non-face-to-face exercise program. It is recommended that this program be applied to a community health service program for elderly people with knee pain.

Key words: community-dwelling elderly people, knee pain, exercise, non-face-to-face intervention, randomized controlled trial

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