



Effects of Modified-OTAGO on Body Composition in Older Adults during COVID-19 Outbreak: A Preliminary Study

Nichapa Khumpanaid^{1*}, Theerapat Phoka², Surasa Khongprasert^{1#}

¹Department of Exercise Physiology, Faculty of Sports Science, Chulalongkorn University, Bangkok 10330, THAILAND

²Department of Chemistry, Faculty of Science, Chulalongkorn University, Bangkok 10330, THAILAND

Received June 27th, 2022

Accepted July 5th, 2022

Published July 20th, 2022

***Conference presenter:**

Nichapa Khumpanaid, Department of Exercise Physiology, Faculty of Sports Science, Chulalongkorn University, Bangkok, THAILAND

#Corresponding author:

Surasa Khongprasert, Department of Exercise Physiology, Faculty of Sports Science, Chulalongkorn University, Bangkok, THAILAND

E-mail:

Nichapa.chula@gmail.com
(Nichapa Khumpanaid)

Theerapat.P@chula.ac.th
(Theerapat Phoka)

Surasa.K@chula.ac.th
(Surasa Khongprasert)

© 2022, Khumpanaid, N. et al.

This is an Open Access article published under a Creative Commons (CC BY-NC-ND 0.4) license.



ABSTRACT

Introduction: Aging is characterized by an unavoidable decline in body composition, including changes in muscle mass, muscle quality, and adiposity. These compartments contribute to falls, a major health issue that causes serious injuries and death. The COVID-19 outbreak causes long-term quarantine, which limits outdoor activity leading to physical inactivity. As a result, it worsens body composition declination, raising the risk of falls. The Otago Exercise Program (OEP) is widely used to prevent falls. However, it is time-consuming and requires additional walks to get better efficacy.

Objective: This study aims to investigate the effects of modified-OEP on body composition in community-dwelling older adults.

Methods: This study was a double-blinded randomized control trial. Participants aged 60-80-year-olds were randomly assigned to the modified-OEP or control group. The modified OEP group performed a 60-minute session consisting of 40-minutes OEP and 20-minutes walking, while no intervention was assigned to the control group. Body composition was assessed before and 6 weeks after intervention using Dual Energy X-ray Absorptiometry (DEXA). Repeated measures two-way ANOVA was employed for statistical analysis.

Results: After 6 weeks of interventions, the modified-OEP group had a significant decrease in leg fat mass ($p = 0.0008$), total fat mass ($p = 0.0036$), and total tissue percent fat ($p = 0.0320$). These observations were not observed in the control group, indicating the efficacy of the modified-OEP. In comparison between groups, the modified-OEP did not show a statistical difference from the control. However, we observed an improvement trend in lean mass and fat-free.

Conclusion: We demonstrated that the modified-OEP can significantly reduce fat in as little as six weeks. Further investigation should explore the long-term efficacy of such a program.

Keywords: OTAGO exercise; older adults; body composition