

Effects of an exercise program linked to primary care on depression in elderly: fitness as mediator of the improvement

Perez-Sousa M.A.

Olivares P.R.

Gonzalez-Guerrero J.L.

Gusi N.

Purpose: The present study aimed to analyse the effects of 12 months of participation in a public physical activity program linked to primary care on depression level and fitness, and to determine which fitness components were responsible for the improvement in depression using mediation analysis. **Methods:** Participants of this program were 2768 middle-aged and older adults from 67 municipalities throughout the Spanish region of Extremadura. In the analysis only participants with depression and without any missing values for fitness variables were included. This sample was 303 for exercise group and 74 for control group. Socio-demographic data, Geriatric Depression Scale and some fitness tests were applied at baseline and 1 year later. Exercise group performed the program 3 days/week for 50-60 min per session involving brisk walking with intermittent flexibility, strength and balance activities/exercises. Socializing within the group was encouraged in all sessions. Data analysis included analysis of covariance, chi-squared and effect size statistics. Additionally, a parallel model of mediation analysis was performed to determine the indirect effect of the participation in the exercise program on depression through improvements in fitness. **Results:** A considerable reduction from mild, moderate or severe depression to non-depression were obtained for exercise group (68%) P-value <.05. The parallel mediation analysis showed that flexibility (sit-and-reach [$\beta = 0.04$ ($95\% \text{ CI } 0.07 \text{ to } 0.01$)], back scratch [$\beta = 0.06$ ($95\% \text{ CI } 0.12 \text{ to } 0.02$)]) and cardiorespiratory fitness (6-min walk [$\beta = 0.09$ ($95\% \text{ CI } 0.15 \text{ to } 0.04$)]) were mediators of the reduction in depression. **Conclusion:** This exercise program was effective in improving depression in older adults. Integrating aerobic and flexibility exercises in a group-based program of physical activity programs could improve the severity of depression in this population. © 2020, Springer Nature

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Depression

Elderly

Exercise

Mediation analysis

Physical condition

adult

aged

analysis of covariance

article

cardiorespiratory fitness

controlled study

data analysis

demography

effect size

exercise

female

Geriatric Depression Scale

human

human experiment

male

middle aged

primary medical care

walking

depression

fitness

kinesiotherapy

procedures

psychology

quality of life

Aged

Depression

Exercise Therapy

Female

Humans

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Physical Fitness

Quality of Life