

Air Pollution and Cardiorespiratory Changes in Older Adults Living in a Polluted Area in Central Chile

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Abstract

One recognized cause of cardiorespiratory diseases is air pollution. Older adults (OA) are one of the most vulnerable groups that suffer from its adverse effects. The objective of the study was to analyze the association between exposure to air pollution and changes in cardiorespiratory variables in OA. Observational prospective cohort study. Health questionnaires, blood pressure (BP) measurements, lung functions, respiratory symptoms, physical activity levels, and physical fitness in high and low exposure to air pollution were all methods used in evaluating OAs in communes with high contamination rates. Linear and logistic models were created to adjust for variables of interest. A total of 92 OA participated in this study. 73.9% of the subjects were women with 72.3 ± 5.6 years. 46.7% were obese, while 12.1% consumed tobacco. The most prevalent diseases found were hypertension, diabetes, and cardiovascular disease. Adjusted linear models maintained an increase for systolic BP of 6.77 mmHg (95% CI: 1.04-12.51), and diastolic of 3.51 mmHg (95% CI: 0.72-6.29), during the period of high exposure to air pollution. The adjusted logistic regression model indicated that, during the period of high exposure to air pollution increase the respiratory symptoms 4 times more (OR: 4.43, 95% CI: 2.07-10.04) in the OA. The results are consistent with an adverse effect on cardiorespiratory variables in periods of high exposure to air pollution in the OA population. © The Author(s) 2022.

Author keywords

Air pollution; blood pressure; older adults; physical activity; respiratory diseases