Abstract

Objective: To determine if spirometric values evaluated in healthy children aged 7-8 years differ from one locality with high historical levels of air pollution versus a locality with lower levels of air pollution in Chile. Materials and methods: Descriptive, non-experimental, exploratory and ex post facto cross and cause and effect. In total 261 surveys were performed of respiratory health and rated according to inclusion criteria, 110 healthy children between 7 and 8 years (55 children in each commune). Spirometric tests were performed, considering variables FEV1, FEF25-75, PEF and FVC. Obesity, physical activity, indoor pollution from heating and snuff smoke exposure were also described. Results: The analyzed spirometry FEV1 and FEF25-75 showed significant differences (p <0.05) and PEF showed high significant differences (p<0.005) by location, that is to say, the average of these variables in the locality of Los Andes, commune with low air pollution is greater than Cerro Navia, a commune with high levels of air pollution. Variable in PEF was found also between gender significance. FVC showed no difference between communities. Conclusions: Healthy children of 7 and 8 who live in the locality where exposure of air pollution is high, have lower lung functions compared with healthy children with similar characteristics who live in communities with lower levels of air pollution. There are other factors that could influence the detriment of pulmonary function, in this study were described as confounding factors.

Keywords

Air pollution, PM10, lung function, children.