

Investigation of respiratory problems and Spirometric parameters in workers of auto parts manufacturing industry

Mohammad Javad Fani¹, Abdollah Gholami², Javad Sajedifar³, Jalaluddin Tamaddon yolme^{4*}, Sahar Hazhbar⁴

1- Instructor, MSc. of Occupational Health Engineering, school of health, Gonabad University of Medical Sciences, Gonabad, Iran

2- PhD Student of Occupational Health, School of Health, Tehran University of Medical Sciences, Tehran, Iran

3- MSc. of Occupational Health Engineering, School of Health, Tehran University of Medical Sciences, Tehran, Iran

4- BSc. of Occupational Health Engineering, Student Research Committee, School of Health, Gonabad University of Medical Sciences, Gonabad, Iran

*Corresponding Address: School of Health, Gonabad University of Medical Science, Gonabad, Iran.

Email Address: Amirhasantamadon@yahoo.com

Abstract

Background & Aim: Workers of auto parts manufacturing industry expose to the gases, vapors and dust created from devices. This exposure will probably increase the risk of occupational lung diseases. This study aimed to determine the respiratory problems and spirometric parameters of workers in the industry of auto parts.

Methods: This is a case-control study in which 48 workers in an auto parts manufacturing industry were selected as case group and 47 administrative staff as control group. Data about the prevalence of respiratory symptoms was collected through the standard questionnaire of respiratory symptoms according to the American Lung Association recommendation. Pulmonary function parameters were measured using a calibrated spirometer. Data were analyzed using SPSS 20 and statistical tests including t-test, Wilcoxon and chi-square.

Results: The mean age of participants in the case and control groups was 29.5 and 33.72 respectively. The average concentration of pollutant in the manufacturing unit was 5.51 ± 2.3 mg/m³. In addition, the most and the least respiratory problems were related to dyspnea and cough with sputum, respectively. Furthermore, forced vital capacity (FVC), forced expiratory volume in one second (FEV1) and peak expiratory flow (PEF) were different in various groups ($p < 0.05$).

Conclusion: Regarding the frequency of respiratory problems and decrease in spirometric parameters among workers exposed to risk factors, protective measures should be applied against pollutants. Moreover, it is recommended to educate workers about this issue.

Keywords: auto parts industry workers, pulmonary capacity, spirometry, respiratory problems

