



Analysis of PM_{2.5} changes correlation with the rate of stroke mortality in Mashhad in 2014 and 2015

Khalilollah Moeinian¹, Sima Baridkazemi², Ali Taghipour³, Hamid Reza Nassehinia^{4*}

1. Department of Environmental Health Engineering, School of Health, Semnan University of Medical Sciences, Semnan, Iran, khalilollah@yahoo.com
2. Department of Environmental Health Engineering, School of Health, Semnan University of Medical Sciences, Semnan, Iran, sima.baridkazemi94@gmail.com
3. M.D. Ph.D. in Epidemiology, Associate Professor, Social Determinants of Health Research Center, Mashhad University of Medical Sciences, Mashhad, Iran, taghipoura@mums.ac.ir
4. Department of Environmental Health Engineering, School of Health, Semnan University of Medical Sciences, Semnan, Iran, hrnassehi@semums.ac.ir

Abstract:

This ecological study (correlation) has been conducted with the aim of analyzing the correlation between PM_{2.5} change and the rate of stroke mortality in Mashhad during the years 2014 and 2015. Data were collected from the hospital, the Monitoring Center of Environmental Pollutants, and the Bureau of Meteorology in the Khorasan Razavi province and were analyzed using the software SPSS to evaluate the correlation. The results show that the correlation coefficient between PM_{2.5} and the rate of stroke mortality in different seasons in 2014 and 2015 are 0.997 and 0.902 respectively. The correlation was stronger in 2014 and is significant, at a confidence level of 0.01. According to the results, the annual average concentration of PM_{2.5} decreased from 29.261 (µg/m³) in 2014 to 25.283 (µg/m³) in 2015, on the other hand, the annual rate of stroke mortality decreased by 4.4% in 2015 relative to 2014.

Keywords: Air pollution, Stroke Mortality, PM_{2.5}, Ecological study, Mashhad