Analysis of $PM_{2.5}$Concentration in Mashhad City, Iran in 2013

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Abstract

Background and Aims: particulate air pollution is one of the main sources of air pollution in urban areas that is generated usually from various sources such as vehicle exhaust, industrial combustion processes or secondary conversion of gaseous pollutants. Particulate matterlessthan2.5micronsin diameter, penetrate deep into the lungs and are caused respiratory problems.24-hour standard of $PM_{2.5}$ is 35micrograms per cubic meters. The aim of this study was analysis of $PM_{2.5}$concentration in Mashhad city, Iran in 2013.

Materials and Methods: this study was cross-sectional and within a year(from April to March2013) was conducted. Results were analyzed using one-way ANOVA., and then compared with the Environment Protection Organization's standard rates.

Results: the results revealed that the maximum concentration of $PM_{2.52.}$ was, 42.34μ/m^3 at Daneshgah station. The results revealed that24-hour maximum concentration of $PM_{2.5}$ was46.88 in the autumn.

Conclusion: The results showed that September and winter seasons had the highest prevalence rate that in some cases, $PM_{2.5}$concentration is more than the standard rate. The Daneshgah station has the highest density of $PM_{2.5}$ to be allocated.

Keywords: $PM_{2.5}$, air pollutant, the primary standard, Mashhad.