عنوان مقاله:

Effect of the Meteorological Parameters on the Indoor PM2.5 and PM10 Concentrations in a Hospital

محل انتشار:

دومین کنفرانس ملی ایمنی و بهداشت (سال: 1399)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

Exposure to the particulate matter is related to a variety of acute and chronic health effects. Also, it is animportant factor in the indoor air quality in hospitals. The present study aimed to determine the effect ofmeteorological parameters on the indoor PM2.5 and PM10 concentrations in the operation room, pediatric, andintensive care unit wards in the hospital in Kashan, Iran.The PM2.5 and PM10 concentrations were measured at two indoor sites and one outdoor site in each oneof the wards from March to May 2015. Also, the wind rose was drawn for determining the Prevailing wind.The mean indoor and outdoor PM2.5 and PM10 concentrations increased during the study period. The resultsobtained of wind rose showed that the prevailing wind (4.5% of the entire winds) was the direction of the westsouthwest.Also, the highest mean outdoor PM2.5 and PM10 concentrations were related to the ambient winddirections of the east-northeast, the west, and the north-northwest in the operation room, pediatric and intensivecare unit wards, respectively.According to the findings, there was a positive association between the indoor and outdoor PM2.5 andPM10 concentrations in the wards. Also, the meteorological parameters played an important role in the indoorparticle mass concentrations in the study wards in the hospital. The effective meteorological parameters on theparticle concentrations were the ambient temperature, wind speed, relative humidity, and rainfall in thehospital. It is asking for improving the indoor air quality of managers and officials to protect the patients andstaff against transferred diseases by the particles in the wards in the hospital.

کلمات کلیدی:

Hospital, Indoor air, Iran, Meteorology, PM10, PM2.5