

عنوان مقاله:

Association of Exposure to Fine Particulate Matter and Risk Factors of Non-Communicable Diseases in Children and Adolescents

محل انتشار:

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خلاصه مقاله:

Background: Risk factors of non-communicable disease (NCD) origin from early life, and exposure to environmental pollutant may be a predisposing factor. This study aimed to investigate the association of air quality index (AQI) and fine particulate matter (PM_{2.5}) with some NCD risk factors in a sample of Iranian children and adolescents. Materials and Methods: This cross-sectional study was conducted in 2014 to 2016 among children and adolescents, aged 6-18 years, in Isfahan, Iran. Physical examination, including weight, height, and blood pressure, was conducted by standard methods. Fasting blood sample was obtained for fasting blood glucose, total cholesterol, high density lipoprotein-cholesterol, low-density lipoprotein- cholesterol, and triglycerides. The mean AQI and PM_{2.5} values from the study time till one year prior to the survey were used. Multiple linear regression analysis was conducted for the association of AQI and PM_{2.5} with other variables. Results: Participants consisted of 186 children and adolescents with mean (SD) age of 10.52(2.38) years. Exposure to higher level of PM_{2.5} had significant associations with higher levels of systolic blood pressure, low-density lipoprotein cholesterol, and triglycerides. It also had positive relationship with other risk factors and inverse association with low-density lipoprotein cholesterol (LDL-C), but these associations were not statistically significant. The corresponding figures were not significant for AQI. Conclusion: At current study results showed that exposure to higher levels of fine particulates was associated with some NCD risk factors in children and adolescents. Early life prevention of NCDs can lead to large reductions in disease risk; adverse effects of ambient pollutants should be considered in this regard.

کلمات کلیدی:

Adolescents, Air pollution, Blood glucose, blood pressure, Children

