AIR POLLUTION AND DEPRESSIVE SYMPTOMS IN THE ELDERLY: THE KOREAN ELDERLY ENVIRONMENTAL PANEL STUDY (KEEPS)

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Background and Aims: Although the effects of air pollution on various diseases were well studied, few studies examined its effects on depression. This study investigated the effect of air pollution on the depression symptoms.

Methods: Authors used 569 participants who regularly joined a community elderly care center located in Seoul. The Korean version of the Geriatric Depression Scale -Short Form (SGDS-K) was used to evaluate depression symptomatology during 3-year follow-up study from 2008. Five ambient air pollutants were analyzed using Generalized Estimating Equations (GEE) to associate with SGDS-K. A factor analysis was conducted to determine which items of the SGDS-K were combined to generate a given factor.

Results: Increases of interquartile range of a 3-day moving average of PM$_{10}$, a 5-day moving average of NO$_2$, and 3 weeks moving average of O$_3$ were associated with increases 0.16% (95% CI, 0.04-0.30), 0.24% (95% CI, 0.07-0.44), and 0.83% (95% CI, 0.26-1.65), respectively, of SGDS-K scores. For these three pollutants, factor analysis showed that air pollution worsened emotion such as happiness and satisfaction, and increased physical discomfort such as problems with memory and less energy. However, air pollution was not strongly associated with inferiority feeling or loss of interest. Air pollution effects on depression symptoms were exerted more for female and in warm temperature.

Conclusions: This study showed increasing particulate matter, nitrogen dioxide, and ozone may deteriorate depression symptoms among the elderly. Emotion and physical discomfort were most affected by ambient air pollution.

References: