

Mexico

Guadalajara

Mexico City

Epidemiological [research](#) has shown that exposure to fine [particulate matter pollution](#) (PM2.5) is associated with a reduction in [cognitive function](#) in [older adults](#). However, primary evidence comes from high-income countries, and no specific studies have been conducted in low and middle-income countries where higher [air pollution](#) levels exist.

To estimate the association between the exposure to PM2.5 and cognitive function in a nationally representative sample of older Mexican adults and the associated effect modifiers.

Data for this study were taken from the National Survey of Health and Nutrition in [Mexico](#) carried out in 2012. A total of 7986 older adults composed the analytical sample. Cognitive function was assessed using two tests: [semantic verbal fluency](#) and [three word recall](#). The annual concentration of PM2.5 was calculated using satellite data. Association between exposure to PM2.5 and cognitive function was estimated using two-level logistic and linear regression models.

In adjusted multilevel regression models, each 10 µg/m³ increase in ambient PM2.5 raised the odds of a poorer cognitive function using the three-word memory test (OR = 1.37, 95% CI: 1.08, 1.74), and reduced the number of valid animal named in the verbal fluency test (β = -0.72, 95% CI: -1.05, -0.40). Stratified analyses did not yield any significant modification effects of age, sex, indoor pollution, urban/rural dwelling, education, smoking and other factors.

This study supports an association between exposure to PM2.5 concentrations and cognitive function in older adults. This is particularly relevant to low- and middle-income countries, which are marked by a rapid growth of their aging population and high levels of air pollution ¹⁾.

A total of 16 116 institutional records of CNS tumors were analyzed. The frequency and distribution of [central nervous system tumors](#) were evaluated by tumor type, patient age and patient gender. The annual relationship between CNS tumors and surgical discharges (SD) over the last 20 years was estimated.

The frequencies of most CNS tumors were consistent with those found worldwide, and the most common tumors were neuroepithelial tumors (33%), particularly astrocytic tumors (67%); meningeal tumors (26%); and pituitary tumors (20%). The incidence of pituitary tumors in these data was twice as high as that reported in other regions of the world, and the relationship between CNS tumors and SD was consistent over time (0.22-0.39).

This study summarizes the largest sample of CNS tumor cases analyzed in [Mexico](#) and provides an important reference of the frequency of this tumor type in the country. This work will serve as a basis for conducting studies evaluating factors associated with the presence of CNS tumors and for identifying adequate public health interventions ²⁾.

1)

Salinas-Rodríguez A, Fernández-Niño JA, Manrique-Espinoza B, Moreno-Banda GL, Sosa-Ortiz AL, Qian ZM, Lin H. Exposure to ambient PM(2.5) concentrations and cognitive function among older Mexican adults. *Environ Int.* 2018 Apr 25;117:1-9. doi: 10.1016/j.envint.2018.04.033. [Epub ahead of print] PubMed PMID: 29704751.

2)

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