

Depression and Pesticide Exposure among Male Farmers in Greece

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Abstract

Introduction: Although there are fairly consistent studies across different countries reporting that a history of poisoning event is a risk factor of depression, there are only few shedding light on the impact of cumulative lifetime use of any pesticide on depression among agricultural populations in doses below that causing acute toxicity and yet there are inconsistencies. The purpose of the present study is to evaluate the relationship between both cumulative and acute pesticide exposure and depression among Greek male farmers.

Methods: A cross-sectional study was performed in a study population of 252 Greek male farmers using the Center for Epidemiological Studies Depression (CES-D) scale. Cumulative pesticide exposure was categorized in three mutually exclusive groups related to lifetime pesticide use: low (<275 days, the reference group), intermediate (276-1200 days) and high (>1200 days). Acute pesticide exposure was categorized in pesticide poisoning events and High Pesticide Exposure Events (HPEEs). Multivariable logistic regression analysis was performed and Odds Ratios, 95% Confidence Intervals and p-values were presented.

Findings: After adjusting for confounding factors, a positive significant association was found between both high-exposure group and HPEEs and depressive symptoms. Ever having used insecticides, fungicides, organophosphates, organochlorines, pyrethroids, or carbamates was significantly associated with depressive symptoms.

Conclusion & Significance: Apart from acute, high cumulative pesticide exposure may as well contribute to the development of depression. Agricultural policies should focus on implementing restrictions on use and sale of hazardous pesticide classes and on training programs aiming at adequate use of personal protective equipment and safety procedures in handling pesticides.

Keywords

Pesticide exposure, pesticide poisoning, depression, farmers.