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Symptoms of psychological distress and suicidal ideation among banana workers with a history of poisoning by organophosphate or n-methyl carbamate pesticides.

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Abstract

OBJECTIVES: Neuropsychiatric disorders and increased suicide rates have been associated with exposure to cholinesterase inhibiting organophosphates. This study examined symptoms of psychological distress, including suicidal ideation, among banana workers in Costa Rica previously exposed to a cholinesterase inhibiting pesticide.

METHODS: 78 workers who had received medical attention 1-3 years previously for occupational pesticide poisoning were recruited: 54 had been exposed to organophosphate, 24 to carbamate, and 43 and 35, respectively, had single and multiple poisoning episodes with a cholinesterase inhibitor. Referents were 130 non-poisoned workers randomly selected from company payrolls. Psychological distress symptoms during the month prior to interview were obtained using the Brief Symptom Inventory (BSI), which has a general severity index and nine subscale scores. Differences in abnormal BSI scores (T score \geq 63) were assessed through multivariate logistic regression for all poisoned and for subcategories of poisoned as compared to non-poisoned workers.

RESULTS: Organophosphate poisoned workers reported significantly more symptoms than non-poisoned on all but one symptom dimension. Significant trends of increasing symptoms with increasing number of previous poisonings were seen for somatisation, obsessive-compulsiveness, interpersonal sensitivity, depression and anxiety. Carbamate poisoned workers only had increased scores for somatisation. The ORs for suicidal thoughts were: all poisoned 3.58 (95% CI 1.45 to 8.84); organophosphate poisoned 3.72 (1.41 to 9.81); carbamate poisoned 2.57 (0.73 to 9.81); and 2.65 and 4.98, respectively for 1 and \geq 2 poisonings (trend $p=0.01$).

CONCLUSIONS: This cross-sectional study showed a relationship between acute occupational poisoning with organophosphates and psychological distress including suicidal ideation. Stronger designs are needed to address causality.

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