EXPOSURE TO PESTICIDES AND MENTAL HEALTH OF VECTOR CONTROL WORKERS IN THE STATE OF RIO DE JANEIRO, BRAZIL

Priscila J. da Silva. R Vidal[1,2]; Ana Paula Neves[1,2]; Ana Cristina Simões Rosa[2]; Eline Simões Gonçalves[2,3]; Marcus Vinicius dos Santos[2]; Leandro V. B. Carvalho[2]; Marcia Sarpa[4]; Luciana Gomes[2]; Liliane Reis Teixeira[1,2]; Ariane Leites Larentis[1,2,5]

1Postgraduate Program in Public Health and the Environment (PPGSPMA)/Ensp/Fiocruz
2Center for the Study of Workers' Health and Human Ecology (Cesteh)/National School of Public Health Sergio Arouca (Ensp)/ Fiocruz
3Postgraduate Program in Environmental Geochemistry (PPGGeociências)/Institute of Chemistry (IQ)/Fluminense Federal University (UFF)
4National Cancer Institute (INCA), Prevention and Surveillance Coordination (CONPREV)
5Postgraduate Program in Professional Health Education/Polytechnic School of Health Joaquim Venâncio (EPSJV)/Fiocruz

INTRODUCTION: The scenario of exposure to pesticides in Brazil is critical, since the country has become one of the largest consumers in the world, even using substances banned in other countries, such as prallethrin and imidacloprid, that compose Cielo used in public health actions. Such kinds of pesticides are applied by Vector Control Workers (VCW) to combat endemic diseases, leading to acute and chronic exposure. **OBJECTIVE:** To characterize the exposure of VCW in the Rio de Janeiro state to pesticides, with symptoms of intoxication and implications for mental health. **MATERIALS AND METHODS: A** cross-sectional study was conducted with 127 ACEs selected by convenience. For data collection, a self-administered multidimensional questionnaire containing the Self-Reporting Questionnaire (SRQ-20), an instrument that investigates common mental disorders (CMD) was used. Subsequently, blood samples were analyzed to assess the levels of cholinesterase enzyme activity and acute and chronic symptoms of intoxication were verified through interviews. The CMD screening groups were classified as cases and non-cases and the difference in acetylcholinesterase levels between groups was compared using the Mann-Whitney U test. The study is part of a Multicenter Project and was approved by the Ethics Committee CAAE: 03323018.4.0000.5240. **RESULTS:** The prevalence of physical and psycho-emotional symptoms was 35.4% (95% CI 27.0 - 44.0). The comparative screening groups (cases and non-cases) showed a statistically significant difference in acetylcholinesterase activity ($p = 0.011$). The VCW reported using various pesticides, especially malathion. Multiple symptoms of intoxication were reported with

a high prevalence (86.6%), including headache (60.8%), anxiety (59.5%), irritability (56.7%), insomnia (54.0%), tingling (53.5%), drowsiness (47.6%), dizziness (46.4%), depressed mood (43.3%), altered attention (42.5%), night sweats (39.4%), tremors (38.6%), involuntary movements (37.3%), weakness (36.0%), with memory alterations standing out (62.2%). Over than a third of workers had acetylcholinesterase levels below the reference value (35%). **CONCLUSION:** The results indicate that the working conditions and processes of VCW are harmful to the population studied, including effects on mental health. Longitudinal studies with vector control workers are recommended to assess the incidence of damage to health over decades of exposure.

Keywords: Vector Control; Health Surveillance; Occupational Exposure; Biomarkers of exposure

Funding: Health Surveillance Secretariat (SVS/MS); Fiocruz; Fapergs-INOVA-Fiocruz Single Health Network of Rio Grande do Sul; Capes Grant: 88887.628332/2021-00