EVALUATION OF EXPOSURE TO PESTICIDES THROUGH THE USE OF EFFECT BIOMARKERS IN RURAL WORKERS AND RURAL RESIDENTS IN RIO DE JANEIRO STATE – BRAZIL

Marcia Sarpa de Campos Mello, 1 Juliana Amazonas, Paula V Baptista, Katia Poça, Arthur Schilithz, Ubirani Otero, Sergio R Alves. 1FIOCRUZ, Brazil

Introduction Brazil is one of the world’s largest consumers of pesticides and this intense use impacts not only the environment but also exposes a wide range of individuals, such as rural workers who are occupationally exposed to pesticides and also the residents of the rural area environmentally exposed.

Objectives To evaluate occupational exposure to pesticides and to identify the neurotoxic and genotoxic effects in rural workers (RW) and rural residents (RR).

Methods A sectional epidemiological study was carried out with 104 RW and 23 RR of the city of Casimiro de Abreu (RJ/Brazil). A comparison group (CG) was formed with 103 residents of the urban area of the same city. Genotoxic analyses, through the comet assay and micronucleus test (MN), and the evaluation of the activity of cholinesterase enzymes (AChE and BChE), were performed.

Results A reduction in cholinesterase enzyme activity was observed, mainly for butyrylcholinesterase of RW and RR when compared to CG (RW = 3856.40; RR = 3956.04; CG = 4359.57; p = 0.002). An increase in genotoxic effects in RW when comparing CG were observed (comet assay: RW = 21; CG = 10; p < 0.001 and MN number: RW = 6.50; CG = 3.00; p < 0.001), demonstrating that individuals occupationally exposed to pesticides are more likely to have genotoxic effects when compared to non-exposed individuals.

Conclusion The findings from this research will serve to support the execution of programs to monitor populations exposed to neurotoxic and genotoxic substances and allow the development of strategies for the prevention, control and surveillance of effects generated by occupational and environmental exposures to pesticides.

POLICY ISSUES ON WORK AND EMPLOYMENT IN SMALL SCALE MINING INDUSTRIES IN THE PHILIPPINES

1Sophia Francesca Lu. 1University of the Philippines Diliman, Philippines

Objective Small scale mining (SSM) has contributed 14% of the total Gross Domestic Product (GDP) of the Philippines. The aim of the study is to look into policy issues on work and employment of small scale miners in the Philippines.

Methods The data were based on gray literature, peer-reviewed journals, databases, government statistics, and secondary literature on major mining disasters in the Philippines, and the impact of regulation or lack thereof in this industry.

Results Research findings show that mining work is artisanal, with use of simple tools, and lack of sophisticated equipment and processes. There is massive use of toxic chemicals such as cyanide and mercury that have been associated with adverse health problems. The study review showed certain health issues due to cyanide and mercury poisoning from mining such as rapid breathing, gasping, tremors, convulsions, headache, dizziness and thyroid enlargement and eventually death, and children ages 17 years old and below experienced cough, wheezing, shortness of breath. In Western Mindanao, workers were found to be exposed to high levels of mercury. Gastrointestinal complaints of the workers were significantly associated with elevated hair methylmercury levels. Despite these, the government has no existing specific regulation and monitoring system for safety and health among small scale miners in the Philippines. Other policy issues included the following-that small scale mining is unregulated and unrecognized, absence of social safety net protection for the sector.

Conclusion Based on the research and policy reviews, there is a need to integrate the small scale mining into the labour economy so as to regulate and prevent hazardous work practices.
implementing and evaluating public policies. It could also serve as an initial stimulus to create strong national and regional occupational monitoring systems.

**O-311 SETTING PRIORITIES IN OCCUPATIONAL HEALTH RESEARCH IN EUROPE**

Manolis Kogevinas, Ingrid Sivesind Mehlum, Neil Pearce, Kurt Straif, Michelle Turner, Maria Albin, Roel Vermeulen, Robert Barouki. IS GLOBAL, Spain

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**Background** Employment is an essential component of adult life, and occupation is a major determinant of health. Despite profound changes in working life, there has been little coordinated European occupational health research.

**Objectives** We present results from the HERA international project funded by the EU Horizon2020 program, to set priorities for an environment and health research agenda in the EU for 2020–2030.

**Methods** We contacted hundreds of researchers in Europe through an online survey. We also identified major policy needs in the health and environment/occupation nexus by contacting national, regional, and European stakeholders representing authorities, intergovernmental organizations, civil society, and the private sector through surveys and regional meetings. We applied a priori defined criteria to examine novelty, public health importance, importance to the environment, impact on policies, and potential for innovation within the sustainable development goals.

**Results**

Main research gaps identified include (i) Climate change and worker health; (ii) Ageing workers; (iii) New technologies and chemicals; (iv) Working time; (v) Changing employment patterns and precarious employment; (vi) Mixed exposures and biomonitoring; (vii) Work-life-balance; and (viii) Neglected occupational diseases. In addition, priority actions related to occupational health were identified such as commuting to work, tools, and infrastructure such as the development of big data, biobanks, occupational cohorts, and large population cohorts with occupational information, development of exposure some type approaches, and approaches examining societal aspects on employment and productivity.

**Conclusions** We will discuss challenges in the identification of key areas in occupational health research that will benefit from new scientific evidence and challenges in strategies to ensure the engagement of stakeholders. This large initiative in Europe has systematically evaluated priorities through the engagement of a wide spectrum of stakeholders across the continent. A consultation process will continue over the next year to raise additional research gaps and calibrate recommendations.

**O-483 GEOGRAPHIC VARIATION IN WORK DISABILITY DURATION IN 5 CANADIAN WORKERS’ COMPENSATION JURISDICTIONS**

Kimberly Sharpe, Kimberly McGrail, Chris McLeod, Cameron Mustard. University of British Columbia, Canada

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**Introduction** Prior research has focused on individual or employer-level factors that influence work disability duration. A smaller number of studies identified differences in work disability duration by province or state and the urban-rural spectrum. Variations may also occur across smaller units of geography due to place-based factors, such as labour market characteristics and healthcare access, that play an important role in work disability duration.

**Objectives** The purpose of this study is to describe geographic variation in work disability duration within five work disability jurisdictions in Canada and examine if variation differs by injury type and jurisdiction.

**Methods** Using Canadian workers’ compensation data, we examined variability in disability days by calculating the coefficient of variations (CVs) across standardized units of geography in cohorts of workers with low back, shoulder and knee injuries.

**Results** Preliminary results suggest shoulder injuries had the longest disability duration with a mean of 50.10 days (SD