Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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health standards”. The NIOSH criteria document regarding occupational noise exposure was originally published in 1972 and revised in 1998. Based on the best available knowledge at the time, each document provided the basis for a recommended standard to reduce the risk of developing permanent hearing loss from occupational noise exposure. Materials and Methods: The 1998 criteria document identified several areas in which additional research was needed in order to clarify the risks associated with various noise exposure scenarios as well as to develop appropriate recommendations to protect workers against the effects of these exposures. NIOSH and the scientific community have conducted research addressing these and other areas.

Results: Results indicate that some of the previous recommendations should be updated. Data point to three main topic areas in need of updated recommendations – hearing protector fit-testing, improved age adjustment tables, and assessment of complex noise exposures. Updates could be disseminated in a revised criteria document and/or through other communication channels.

Conclusions: This presentation will highlight the latest research and the three main topic areas that are under consideration, and provide an update on the current efforts taken by NIOSH scientists and external collaborators to update occupational noise exposure guidelines in the U.S.

Sp37-4

Hearing outcome analyses in mice and humans with exposures to mixtures of metals with noise

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Introduction: Evidence shows that metals such as lead and cadmium are ototoxic. However, metal ototoxicity in the presence of noise or concurrent exposures to multiple metals is not well understood. This research uses both a toxicological and epidemiological approach to explore metal ototoxicity in the context of (1) a mouse model and (2) a cohort of young adults in an occupational setting.

Materials and Methods: In the toxicology study, CBA/Caj mice were exposed to lead, cadmium, and noise to evaluate alterations in hearing. Mice were tested using ABR, DPOAE, and cochlear cell counts. In the epidemiological study, noise dosimetry, blood metal levels, and health history information was collected from electronic waste workers in Ghana then analysed with linear regression.

Results: Only noise exposures of 105 dB were associated with significant changes to ABR, cochlear cell counts and DPOAE in mice. In humans, sixty percent of electronic waste workers were found to have audiometric notches indicative of noise-induced hearing loss and this was supported by high levels of noise exposures.

Conclusions: Each hearing test indicated significant differences between groups. The temporary effect of the exposure was characterized by an increase of the threshold of the acoustic reflex before and after the workday.

Sp37-5

Combined effects of low exposure levels of noise and solvents on hearing among printing workers

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Introduction: There is no consensus on the approaches of clinical audiology to identify cases and provide hearing care to those who present hearing difficulties associated with combined exposure to noise and solvents.

Objectives: To assess temporary and permanent auditory effects associated with occupational co-exposure to low levels of solvents and noise.

Methods: Cross-sectional study with 25 printing industry workers simultaneously exposed to low noise (<80 dBA TWA) and low levels of solvents. The control group consisted of 29 industry workers without exposure to noise and/or solvents. Participants answered a questionnaire and underwent an auditory test battery. Auditory fatigue was also examined by measuring the acoustic reflex threshold before and after the workday.

Results: The exposed group had poorer thresholds bilaterally at 6kHz and 4kHz than the control group. Ipsilateral acoustic reflex thresholds were different between groups at the frequencies of 500 Hz and 1 kHz. Brainstem auditory evoked potential results showed differences in the III-V interpeak interval. Echoscan detected a significant difference (p=0.0317) between the exposed (4.58±6.8) and the control (0±4.62) group.

Conclusions: Each hearing test indicated significant differences between groups. The temporary effect of the exposure was characterized by an increase of the threshold of the acoustic reflex. Measuring the shift in the acoustic reflex (EchoScan test) can identify work-related exposures that create auditory fatigue and help prevent hearing impairments possibly before they become permanent.

Special Session 38 New realities for the health of working women in the new normal

Chair: Igor Bello

Session introduction

The crisis unleashed by the COVID-19 pandemic has disrupted the world of work, asymmetrically affecting men and women. Women have had a special impact by having the highest participation in the prioritized sectors of the economy (health, education, food) and this has had an influence on further widening inequities between genders, and especially in terms of their health. In this session we will address some of these aspects from a sectorized and global perspective.

Sp38-1

Warrior Women of the 21st Century: The Role of Female First Responders in the COVID-19 Crisis

Claudia de Hoyos and Igor Bello
Millions of women around the world are part of the essential workforce on the front lines of COVID-19. Globally, women constitute the majority of health and social sector workers who have not stopped their work due to the pandemic. From agriculture to first responders and everything in between, women are playing a huge role in keeping their communities safe and resilient against COVID-19. These women face increasing burdens: they are over-represented at work in health systems, they continue to do most of the unpaid care work in the home, they face high risks of economic insecurity, and they face greater risks of violence, exploitation, abuse or harassment during times of crisis and quarantine. In addition, due to the persistent gender inequalities, which have even worsened during the COVI-19 crisis, in many dimensions, the jobs, businesses, income and living standards of women, who may be more exposed than men to the economic consequences and, therefore, they become more vulnerable. The COVID 19 pandemic has prompted immediate public policy responses by governments to support spending needs in the health sector and mitigate economic effects to first responders. In addition to ensuring economic stabilization and adequate support for men and women, where possible a gender lens should be incorporated in the design and implementation of emergency policy responses. To do so, governments benefit from having in place a well-functioning system of gender budgeting and gender impact assessments, ready access to quality sex-disaggregated data and gender indicators, and skills and expertise on how to provide a swift response.

Sp38-2

Advances and setbacks in health gender gaps and the respective SDGs in the postpandemic

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Quarantines implemented to face COVID-19 has affected workers in very different ways, and especially women, who make up the majority of the workforce in health facilities in the world, and whose role as health personnel adds a triple burden: longer shifts at work, assistance in the education of children and domestic work at home; but they are also part of the informal sector of the economy, which has turned out to be one of the most affected by the imposed social quarantine, which has had very negative consequences at the socio-economic level, especially affecting those workers who do not enjoy protection mechanisms. Social. Those women who were able to continue working, in many cases had to improvise a teleworking station at home, which is an unplanned situation, without preparation and for which many countries lack specific regulations. These new teleworkers had not been prepared for this, they had not agreed on this condition with their employers and they do not have optimal working conditions for this modality and although teleworking is considered suitable for women insofar as it could help to reconcile life. The truth is that many women are reluctant to adopt it. Another angle of the problem is constituted by the indirect effects of quarantine on family life, which presents an unusual increase in domestic violence, with a particular impact on violence against women. gender, finding that 243 million women and girls between 15-49 years of age have been subjected to sexual or psychological violence in the last 12 months.

Sp38-3

Impact of the Pandemic on the Social and Environmental Determinants of the Health of Working Women in the Americas

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COVID-19 has inflicted disproportionate health and economic risks depending on some social conditions, like gender, age, employment condition, or migrant condition, which are least equipped to withstand these risks. As well as social conditions, inequalities between and within countries are exacerbated by COVID-19, and will have long-term negative impacts. In this context, being a woman has determined great differences in the way in which the health risks are faced. This situation caused a regression in general human development, widening the gaps in compliance with several of the SDGs, and especially those related to gender equity (SDG5), poverty reduction (SDG1), good health and well-being (SDG 3), decent work (SDG8) and the reduction of inequities (SDG10). The synergistic effects of social conditions and their effect on the workers health were also evident, as the situation of women worsened. The crisis produced by COVID-19 has not yet ended, and its effects cannot yet be measurable over time. But we must learn about how to protect working women in times of crisis, where the important, asymmetric and heavy burden that she must face is evident. Strengthen the universality of social protection, connect the primary healthcare system with the workers’ health system and encourage affordable mechanisms for people care are some of the initiatives that many countries have begun to implement to improve this situation, but we are still far from building resilient systems before these types of disruptive situations, which allow us to continue advancing in the construction of a more equitable, just and healthy society for women.

Sp38-4

Health conditions of the most vulnerable female workers and their impact on health systems: Pandemic in South Africa

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On March 5th, 2020, the first COVID-19 case was diagnosed in South Africa and the President declared a National State of Disaster. Almost two years later, this State of Disaster persists. More than 2.9 million cases of COVID-19 and 87780 fatalities have been recorded. Most women workers are in vulnerable employment as domestic help, traders in the informal economy,