

ABSTRACT

Title: Hearing Loss associated with Noise and Chemical Exposures at the Workplace in Malaysia.

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Abstract:

An exposure towards noise and chemical had been associated to cause a synergistic effect more than exposure to noise and chemical alone. Many researches had been done to find a suitable diagnostic tool to detect an early stage of developing hearing loss cause by these exposures, yet, it is still not available especially in Malaysia. The aim of this study was to further investigate adverse effect of chemical-induced hearing loss and to find an effective audiological assessment for this condition. The study took places in an automotive manufacturing company at Pekan, Pahang which involved 120 respondents categorized into 4 group of control, exposure to noise and chemical only, and exposure to both agents was evaluated bilaterally using a Pure Tone Audiometry (PTA), Acoustic Reflex, Distortion Product Otoacoustic Emissions (DPOAE), Auditory Brainstem Response (ABR), Hearing-in-Noise Test (HINT), Dichotic Digit Test (DDT) and Gaps-in-Noise (GIN). Age and noise exposure levels were accounted for as confounding variables in all statistical models. The findings had shown that the solvents exposure is associated and does had adverse effect with both cochlear and central auditory dysfunction. The test result for PTA, HINT, DDT and GIN which showed to have a significantly associated with the ototoxicity of organic solvents where the chemical only group showed a poorer score in comparison with the no exposed group, meanwhile ABR does not have an obvious effect associated with the organic solvents exposure which suggest that the chemical ototoxicity may not prominently shown at the brainstem level. Thus, further investigations are still needed in the future.

Keywords: Hearing Loss, Organic Solvents, Noise, Automotive, Audiological test