Factors associated with the use of hearing protection device at work

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Objectives To identify factors associated with hearing protection device use (HPD) at work.

Methods This is a cross-sectional study carried out with a random cluster area sample of households from the city of Salvador, Bahia, Brazil. Questionnaires were used to obtain sociodemographic, occupational and health related data. Noise exposed worker were those who reported having to shout to be heard in the workplace. When exposed, they were asked whether they use HPD, and how often was it.

Results There were 2429 workers from 18 to 65 years of age, and 299 (12.3%) reported being exposed to loud noise at work. The prevalence of HPD use was 44.5%, 59.3% and 21.4% for men and women, respectively. Among men, only high socioeconomic status (prevalence ratio, PR = 1.47; 95% confidence interval, CI: 1.14, 1.90) and previous audiometry (PR = 1.47; 95% CI: 1.15, 1.88) were associated with HPD use. In contrast, among women the perception of a good safety climate was associated with HPD use (PR = 2.92; 95% CI: 1.34, 6.34), particularly the reporting of having supervisors committed with safety (PR = 2.09; 95% CI: 1.04, 4.21), clear rules to prevent work-related injuries (PR = 2.81; 95% CI: 1.41, 5.59) and when they were informed about work safety guidelines (PR = 2.42; 95% CI: 1.23, 4.76).

Conclusions Our results show that there is a gender bias regarding HPD use less favourable to women compared with men; women’s HPD use is more likely to be positively influenced by safety climate suggesting that gender needs to be taken into account in hearing protection programs.

Occupational noise exposure and the prevalence of hyperglycemia

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Objectives This cross-sectional study aimed to investigate the association between occupational noise exposure and the prevalence of hyperglycemia among workers.

Method We recruited 532 volunteers in a machinery and equipment manufacturing factory as the study population in Central Taiwan. The walk-through survey was performed to identify the workplaces with noise levels above 80 A-weighted decibel (dBA) first and then the noise dosimeter was used to conduct personal time-weighted-average sound levels. After assigning each subject to a similar exposure group, we classified all subjects into high-exposure (noise levels ≥85 dBA, n = 91), median-exposure (80 ≤ noise levels <85 dBA, n = 62), low-exposure (noise levels <80 dBA, n = 76) and reference groups (officers, n = 303). Logistic regressions were applied to estimate the risk of hyperglycemia by different exposure groups after controlling for potential confounders.

Results The mean noise levels of high-exposure, median-exposure, low-exposure and office workers were 89.5 ± 2.90 dBA, 83.4 ± 0.4 dBA, 76.7 ± 1.1 dBA and 71.4 ± 4.0 dBA, respectively, and there was a significant difference between groups (p < 0.001). The prevalence of hyperglycemia among high-exposure, median-exposure, low-exposure and office workers were 10.2%, 13.2%, 11.3% and 9.9%, respectively. After controlled for age, sex, education level, body mass index, cigarette smoking, alcohol drinking and regular exercise, the odds ratio of hyperglycemia between the high-exposure and office workers was 3.96 (95% confidence interval = 0.83–18.83), which had a marginal difference (p = 0.08).

Conclusions Occupational noise exposure above 85 dBA might be associated with the increasing prevalence of hyperglycemia. Future studies should be conducted to demonstrate the potential causality of occupational noise and hyperglycemia.