ASSOCIATION BETWEEN OCCUPATIONAL NOISE EXPOSURE, BEHAVIORAL FACTORS, AND TOTAL CARDIOVASCULAR RISK

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Background and Aims: Noisy occupational environment presents an increasing hazard to health. Its effects are insidious in development, particularly the non-auditive effects and/or effects on cardiovascular system. Cardiovascular diseases involve multiple biomedical risk factors. Specific aspects of the occupational environment are embedded in a large, complex matrix of their influences. The aim of the study was to compare selected lifestyle characteristics, dietary habits and health determinants in relation to total cardiovascular risk in the exposed and unexposed samples.

Methods: 2,690 healthy employees (44.9% men and 55.1% women) in the mean age 41.5±9.6 years were examined for cardiovascular risk factors (serum lipid levels, blood pressure, anthropometric parameters on overweight and obesity) and completed a questionnaire on socioeconomic, demographic and behavioral factors, nutritional pattern, self-reported health status, and mental health. Relative cardiovascular risk was calculated using SCORE chart after the projection to the age of 60. 1,210 subjects (58.3% men) exposed to noise in their workplaces were compared to unexposed subjects; chi-square and multiple linear regression analysis were performed.

Results: Exposed subjects were younger (41.1 yrs vs. 41.8 yrs; NS), with lower educational level, they had higher physical (p=0.0000) and stress load (p=0.0417) at work, worse mental health score (NS), and higher relative cardiovascular risk (OR=1.80; 95%CI=1.51-2.14; p=0.0000). They reported more often exposure to second hand smoke at work as well as in privacy and self-reported poorer health status. Linear regression analysis (adjusted for age) showed positive association among SCORE60 and noise exposure (p=0.0000), physical load (NS), second hand smoke exposure (p=0.0000), smoked meats (p=0.0025) and alcoholic beverages consumption (p=0.0000), and negative association with educational level (NS), fruit (p=0.0000) and vegetable (p=0.0345) consumption.

Conclusions: Our results point out the possible combined adverse effects of noisy working conditions, wrong lifestyle and/or incorrect nutritional habits to total cardiovascular risk.