Occupational noise exposure and the risk for work-related injuries: A systematic review and meta-analysis

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ABSTRACT

Occupational noise has been linked to occupational injuries, with the underlying mechanisms being cognitive impairment, poor information processing, disturbed intelligibility of sounds and communication, etc. Strategies to control occupational hazards often rely on dose-response relationships needed to inform policy, but, to our knowledge, quantitative synthesis of the relevant literature has not been done so far. This study aimed to systematically review the epidemiological literature and to perform a meta-analysis of the risk for work-related injuries due to occupational noise exposure. PRISMA and MOOSE guidelines were followed. PubMed, ScienceDirect, and Google Scholar were searched up until December 15th 2016 in English, Russian, and Spanish. Reference lists, grey literature, and expert archives were searched as well. Overall, 19 studies were included. Their methodological quality was evaluated and incorporated into the meta-analysis weights, using the quality effects model. Preliminary results showed RR per 5 dB = 1.22 (95% CI: 1.15, 1.29) and RR highest vs. lowest group = 2.18 (95% CI: 1.62, 2.93). The systematic review will be updated regularly and final results will be presented at the ICBEN Congress.