

ASSESSING THE RELATION BETWEEN MUSCULOSKELETAL DISEASE PREVALENCE AND PHYSICALLY DEMANDING WORK

Nina Zaitseva, *Federal Scientific Center for Medical and Preventive Health Risk Management Technologies, Russia*
Pavel Shur, *Federal Scientific Center for Medical and Preventive Health Risk Management Technologies, Russia*
Vitaly Kostarev, *Federal Scientific Center for Medical and Preventive Health Risk Management Technologies, Russia*
Alla Klimenko, *Federal Scientific Center for Medical and Preventive Health Risk Management Technologies, Russia*

Background and Aims: The study was designed to assess cause-effect relations between physically demanding work and musculoskeletal disease prevalence using epidemiological analysis.

Methods: The study group comprised 24 male press operators (an average age of 37.8 ± 1.9 , length of service – more than 17 months). The control group comprised 62 male subjects (an average age of 39.2 ± 1.5 , length of service - more than 18 months). The main criteria for the choice of control group were absence of the studied adverse factor, similarity in age and length of service. In 2009, prevalence levels for the study and control groups were estimated to be 250 ‰ and 81 ‰, respectively. In view of respectively high disease prevalence within the groups, we calculated odds ratio (OR) along with relative risk (RR).

Results: The epidemiological analysis findings are the following: OR is 3.8 (95% confidence interval (CI) is 1.04 – 14.78); RR is 3.10 (95% CI is 0.87 – 11.01); etiological fraction (EF) is 67.7%. OR values indicate a reliable cause-effect relation between physically demanding work and musculoskeletal disease prevalence whereas RR also indicates this relation but with a lower degree of reliability. Risk difference is 0.17 which corresponds to the population risk for musculoskeletal diseases in healthy study group subjects – 3 cases per year. This disease can be considered occupational since according to the classification proposed in the Guidelines for Occupational Risk Assessment adopted in Russia, etiological relation between musculoskeletal diseases and work is significantly high.

Conclusions: The application of epidemiological indicators including OR allowed identification of a reliable cause-effect relation between physically demanding work and musculoskeletal disease prevalence in press operators. OR-based methods have better statistical characteristics than those based on RR, especially when a disease is rather prevalent, and provide more reliable assessment of the relation between factors and health effects.