ABSTRACT

Title: Whole Body Vibration Exposure among off-Road Lorry Drivers
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Abstract:

It is common for people to experience Whole-body vibration (WBV) on most days of their lives. There are epidemiological studies in the literature which indicated that exposure to WBV contribute to development of work-related musculoskeletal symptoms. Those work-related musculoskeletal affects the truck, buses, heavy construction equipment with continuous expose with duration of 8 hours. This high daily exposure will risk of long term health effect and particularly at back injury itself. Thus, the exposure levels of lorry drivers using ISO 2631-1 (1997) standards during normal working hours according to difference type of lorry and route need to be systematically conducted according to daily exposure value A(8) and vibration dose value (VDV) . The study covered the off-road lorry driver which undergoes loading and unloading activities. The measurement tools involved was Larson Davis Vibration Meter (HVM 100) and Tri-Axial Seat Pad Accelerometer to record the data collection. The analyze data of WBV by BLAZE program will be evaluate due to vibration significant different between correlation analysis by IBM Statistical Package for Social Science (SPSS) based on Modified Nordic questionnaire earlier. The prevalence of low back pain (LBP) analyze based on qualitative and quantitative analysis. The guidelines for LBP refer to the EU Directive which provides the value of Exposure Action Value (EAV) and Exposure Limit Value (ELV). Result obtained shows the all the type of lorry exceed the EAV with the highest value of A(8) and VDV equal to 4.02 m/s^2 and 226.1 $m/s^{1.75}$ both for unloading activities. . The determined of vibration exposure levels of lorry drivers using ISO 2631-5 (2004) standard according to route and type of lorry which undergoes loading and unloading activities. The future of vibration difference between type of lorry and route was shown in order to find the subjective correction by qualitative and quantitative analysis. The value of daily equivalent static compression dose, S_{ed} and the R factor gain by calculation. Then, IBM Statistical Package for Social Science (SPSS) used to analyze the Modified Nordic Questionnaire. Found that, there are high risk of health adverse toward lumbar spine according to the value of S_{ed}. The different level of exposure for R factor was according to year's exposure. Different year's exposure related to different level of health risk by value of start working age. Thus, several ways of minimizing the exposure such as frequent health monitoring, employer provide training and job rotation as well as with installation the vibration dampers on equipment was also useful.