

Title:

A Comparative Studies of Ten Ergonomics Risk Assessment Methods

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Abstract:

Work-related musculoskeletal disorders or WMSDs are most often cited in various studies related to the risk factors of repetition, application of excessive force, vibration, contact stress, and awkward postures. Lower back, neck, forearms, wrists, hands, shoulders, and elbow are the most often body areas that are affected from these WMSDs. The scientific literature shows that the best preventions from WMSDs are to reduce the exposure to the risk factors. In other words, risk factors of WMSDs should be assessed especially in the work area to ensure the workers have less interaction with the risk factors of WMSDs. The assessment of WMSDs risk factors can be placed in three categories, subjective judgment, direct measurement, and systematic observation. Based on the review, measurement is the most accurate and reliable methods to identify risk factors of WMSDs, but it required significant investment of resources whereas observation methods are the most commonly method used by the ergonomist. The observation method is easier and less costly compared to the other method in identifying the risk factors. It is also the most flexible method when it comes to collecting data in the actual site. The purpose of the study is to obtain the comparison results between the methods to identify the most effective ergonomics risk assessment in preventing WMSDs. While ergonomics practitioners, occupational therapists, employers, union workers, and health and safety authorities need information on the most effective assessment methods available for preventing WMSDs, the literature still offers little applied research that has tested these methods for comparison and lacks information on which methods are the best at preventing WMSDs. There is also no argument between the ergonomics practitioners as the best method to choose is to develop an experiment related to the task and compare the respective result.