Journal of Ergonomics

Kim, J Ergonomics 2015, S4:e002
DOI: 10.4172/2165-7556.S4-e002

Editorial Open Access

Musculoskeletal Disorders and Ergonomic Interventions

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Received date: January 19, 2015; **Accepted date:** January 20, 2015; **Published date:** January 27, 2015

Editorial

Musculoskeletal disorders (MSDs) are impairments of body structures such as muscles, joints, tendons, ligaments, nerves, bones or a localised blood circulation system caused or aggravated primarily by the performance of work and by the effects of the immediate environment where the work is carried out [1]. MSDs can arise from a sudden exertion such as lifting a heavy object, or can arise from making the same motions repeatedly or from repeated exposure to force, vibration, or awkward posture over a long period of time. The symptoms may vary from discomfort and pain to decreased body function and invalidity. Although it is not clear to what extent MSDs are caused by work, their impact on working life is huge. MSDs can interfere with activities at work and can lead to reduced productivity, sickness absence and chronic occupational disability [1].

The preventative attempts of MSDs are often targeted by the workplace to identify incidence rates of both disorders and exposures to unsafe conditions [2]. Approaches to prevention in workplace settings include matching the person's physical abilities to the tasks, increasing the person's capabilities, changing how tasks are performed, or changing the tasks [3]. There have been increasing efforts in recent years to investigate the causes of MSDs and to take actions to prevent them. This has led to increasing recognition from workers, employers and government agencies that a strong relationship exists between factors within the working environment and the development of MSDs [4,5]. Understanding their causes and especially those that are work-related remains the key to primary prevention. Assessing the exposure of workers to known risk factors is essential and appropriate measuring and analyzing methods are needed to be developed.

The science of ergonomics and its application to MSDs associated with the modern workplace provide both an important perspective and a preventative approach. The breadth and impact of ergonomics extends well beyond what is often presented in the recent literature [5]. An ergonomics approach to reduce MSDs can be successful as a stand-alone activity or as an add-on to an existing process, such as a workplace's safety and health program. Regardless of the approach, it is important to fully maximize the effectiveness of the ergonomics process by integrating it with other processes that affect worker safety and health.

This special issue on "Musculoskeletal Disorders and Ergonomic Interventions" from Journal of Ergonomics provides an up-to-date insight into how contemporary ergonomics has enhanced our understanding on the nature of the disorders, their work-relatedness and their potential prevention strategies. Applying ergonomics to these processes at the planning stage will not only prevent the introduction of risk factors into the workplace, but it will avoid costly reengineering efforts to correct situations. Incorporating ergonomics into planning will move an ergonomics process from a reactive to a truly proactive mode.

Modern ergonomics stresses the importance of a participatory approach to prevention and solution finding and evidence in support of this is explored in this special issue. The selected papers in this special topic consider the application of ergonomics knowledge to understand MSDs amongst a range of different industries and working environments.

The first paper prepared by Balmatee Bidassie, Le Zhang, Yuan Gao and Vincent Duffy reports occupational and lifestyle risk factors associated with chronic low back pain with a focus on prevention of related incidences in the workplace. This study shows that chronic low back pain may be managed through workplace ergonomics and psychological approaches that stress at pain management, self-care at home and reducing risk factors associated with slips, trips and/or falls.

The second paper prepared by Avantika Rai and Shalini Agarwal measures the effect of postural discomfort on school children' backpacks. This study deals problems associated with backpack use and shows increasing concerns with school children due to heavy backpacks.

The third paper prepared by Oanthata Sealetsa and Richie Moalosi investigates the prevalence of MSDs in a local brick moulding industry. This study reports that MSDs occur as a result of jobs that put muscles under unnecessary physical demand.

The fourth paper prepared by Momodu Bayo AI, Edosomwan Joseph HE and Edosomwan Taiwo O identifies ergonomic compliance in computer workstations. This study reveals that most of the complained work-related MSD's injuries are eye strain, shoulder pain, arm pain and back pain.

The fifth paper prepared by Landau K, Weißert-Horn M, Jacobs M and Diaz Meyer M reports on the musculoskeletal stresses and corresponding strains occurring in nurses working with totally dependent patients and on training to minimize these and its effect on the nurses. This study shows that the nurses are highly exposed to risk of considerable MSDs. Ergonomic trainings for the nurses were focused on improvement of load-handling techniques, avoidance of extreme body postures, creation of optimal spatial conditions and prevention of accidental falls.

I believe that the five papers in this special issue enhance our understanding on the subject area for Musculoskeletal Disorders and Ergonomic Interventions. I would like to express my sincere gratitude to all the contributors and the Editor-in-Chief with editorial teams for this special issue vigorously.

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This article was originally published in a special issue, entitled: **"Ergonomics and Musculoskeletal Disorder",** Edited by Dr. In-Ju Kim and Dr. Miguel E. Acevedo Alvarez