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Prevention of musculoskeletal disorders in south China

Occupational injuries, such as musculoskeletal disorders (MSDs), seriously threaten frontline worker's health and can cause a great deal of loss in economy. According to the Bureau of Labor Statistics, United States, MSDs accounted for 33% of all worker injury and illness cases in 2013. It is among the most frequently reported causes of lost or restricted work time. In this project, we first described the annual occurrence rate of MSDs observed in a population of 3,479 workers in 60 factories in Shenzhen, China. About half of those workers reported that they had suffered from MSDs in the past 12 months. Then, we studied the association between a set of potential risk factors and MSDs by fitting the data into a logistic regression model. We found MSD risks increased in workers with over 55 working hours per week, high-stress level, and previous injury history. To prevent work-related MSDs in the workplace, we led a one-year participatory and didactic training program for 918 and 2,561 workers, respectively. Participants were asked to report their experience of ache, pain or discomfort in ten body parts before and after receiving the training. To evaluate the program in a more rigorous way, a randomized controlled trial (RCT) was conducted on the collected data. We found that the program could reduce the MSD prevalence rates, especially for lower extremities (drop to 9.9% from 16.8% with p -value<0.001) and wrists and fingers (drop to 8.3% from 12.9%, with p -value 0.002). Finally, we developed a method to measure the cost-benefit ratios of the programs and found that the participatory training was more effective to prevent MSDs than the didactic training.

Biography

Zhimin Li is the Director of Shenzhen Prevention and Treatment Center for Occupational Diseases and the Committee Head of Occupational Ergonomics Chapter, Chinese Ergonomics Society. He has been serving as the Associate Editor of the journal *Occupational Health and Emergency Rescue*. He has published 14 books and over 60 papers.

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