

## Assessment of ergonomics risk factors influencing incidence of musculoskeletal disorders among office workers

S. I. Samaei<sup>1</sup>, A. Tirgar<sup>2</sup>, N. Khanjani<sup>3</sup>, M. Mostafaei<sup>4</sup>, M. Bagheri Hosseinabadi<sup>5\*</sup>, M. Amrollahi<sup>6</sup>

<sup>1</sup>MSc of Occupational Health Engineering, Clinical Research Development Unit of Rouhani Hospital, Babol University of Medical Sciences, Babol, Iran

<sup>2</sup>PhD of Occupational Health Engineering, Movement Disorder Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, Iran.

<sup>3</sup>PhD of Epidemiology, School of Public Health, Kerman University of Medical Sciences, Kerman, Iran.

<sup>4</sup>M.Sc of Environmental Pollution, Science and Research branch of Islamic Azad University, Tehran, Iran

<sup>5</sup>Tutor, School of Public Health, Shahroud University of Medical Sciences, Shahroud, Iran.

<sup>6</sup>MSc of Occupational Health Engineering, School of Public Health, Kerman University of Medical Sciences, Kerman, Iran

### Abstract

**Introduction:** High prevalence of musculoskeletal disorders have been reported by office workers due to the nature of their work. This study aimed to evaluate the prevalence of musculoskeletal disorders in a group of office workers and also to determine the ergonomics risk factors affecting these disorders.

**Material and Method:** This is a cross-sectional study, performed among 174 office workers in Kerman city, Iran. Data collection tools included demographic and organization information form, the Nordic Musculoskeletal Questionnaire (NMQ), and the Rapid Office Strain Assessment (ROSA) method. The gathered data were analyzed by SPSS software version 16 using descriptive statistics, chi-square test, and logistic regression.

**Result:** The prevalence of symptoms of musculoskeletal disorders (MSDs) in the past 12 months was reported 60.4 percent. What is more, significant associations were observed between job tenure and hours a day using computer with MSDs (P-value<0.05). In this sense, with one unit increase in job tenure (years) and duration of computer use (hours per day), the probability of incidence of MSDs gone up 17.2 percent and 15.8 percent, respectively. Based on the statistical chi-square test, a significant relationship was reported between the incidence of MSDs and Rapid Office Strain Assessment method (P-value<0.05).

**Conclusion:** According to results, ROSA assessment method is an efficient tool in the classification and identification of factors affecting the incidence of MSDs among office workers. Performing corrective measures in the dangerous work stations (the second level identified by ROSA technique), reducing the duration of computer use per day, and doing regular sport activities can be noted in order to decrease the prevalence of MSDs in the study group (office workers).

**Keywords:** *Musculoskeletal Disorders, ROSA Assessment Method, Risk Factor, Office Workers,*

\* Corresponding Author Email: : [majidbagheri1989@gmail.com](mailto:majidbagheri1989@gmail.com)