



The impact of ergonomics intervention on psychosocial factors and musculoskeletal symptoms among office workers

Alireza Choobineh^a, Majid Motamedzade^{b,*}, Maryam Kazemi^c, Abbas Moghimbeigi^d, Ahmad Heidari Pahlavian^e

^a Research Center for Health Sciences, Shiraz University of Medical Sciences, Shiraz, Iran

^b Ergonomics Department, School of Public Health and Research centre for Health Sciences, Hamedan University of Medical Sciences, Hamedan, Iran

^c Ergonomics Department, School of Public Health, Hamedan University of Medical Sciences, Iran

^d School of Public Health and, Research Institute of behavioral Disorder and Substance Abuse, Hamedan University of Medical Sciences, Iran

^e Department of Psychiatry, Medical School, Hamedan University of Medical Sciences, Iran

ARTICLE INFO

Article history:

Received 27 December 2010

Received in revised form

6 August 2011

Accepted 14 August 2011

Available online 1 September 2011

Keywords:

Musculoskeletal disorders

Physical job demands

Psychological perceived job

Office workers

ABSTRACT

Musculoskeletal disorders have a multi factorial etiology that includes not only physical risk factors but also psychosocial factors. This study aimed to investigate psychosocial risk factors and musculoskeletal symptoms among office workers of an Iranian oil refinery and also to examine the subsequent effects of ergonomics intervention on musculoskeletal discomfort and psychosocial risk factors.

In this study, 73 office workers as a case group and 61 office workers as a control group from an Iranian oil refinery plant were randomly selected and examined. The Nordic Musculoskeletal Disorders Questionnaire and the Persian version of the Job Content Questionnaire (P-JCQ) were used as collecting data tools before and after the interventional program.

Low back problem (28.8%) was found to be the most common problem among the office workers. Significant differences found between prevalence rates of reported musculoskeletal in upper back, lower back and feet/ankle regions before and after intervention. Our findings showed that psychosocial variables were not affected by the intervention. The only variables on the P-JCQ that were significantly different pre/post intervention are the physical variables: physical job demands, physical exertion and physical isometric load. None of the other psychosocial variables were found to be significant. With the top management support, improvements in all office workstation components were made successfully. *Relevance to industry:* Recently, changes in the nature of work draw increased attention to the relation between psychosocial factors and musculoskeletal disorders. The results of the current study indicate that a well conducted implementation of an interventional program can lead to a decrease in musculoskeletal symptoms and to some extent in the psychosocial factors at work.

© 2011 Elsevier B.V. All rights reserved.

1. Introduction

Recently, many studies have shown that musculoskeletal disorders (MSDs) are related to physical and psychological perceived job demands in the work environment (Fredriksson et al., 2001; Choobineh et al., 2006, 2009; Lee et al., 2008; Lapointe et al., 2009; Lin et al., 2009; Warming et al., 2009; Canjuga et al., 2010; Fernandes et al., 2010; Johnston et al., 2010; De Souza Magnago et al., 2010; Dawson et al., 2011;

Drissen et al., 2011; Gilbert-Ouimet et al., 2011; Haukka et al., 2011; Vandergrift et al., 2011; Westgaard and Winkel, 2011). The economic loss due to such disorders affects not only the individual but also the organization and the society as a whole (Kemmlert, 1994). Musculoskeletal disorders have followed working days lost, disability of workers (Shahnava, 1987; Genaidy et al., 1993; Tsao et al., 2009) and wasting money (Neumann, 2004; Punnet and Wegman, 2004; Eashw, 2008). Risk factors of WMSDs are known to include work place activities such as heavy load lifting, repetitive tasks and awkward working postures (Bernard, 1997; Haynes and Williams, 2008), while demographic characteristics and psychosocial factors are also known to be important predictive variables (Linton and Kamwendo, 1989; Weiser, 1997; d'Errico et al., 2010).

* Corresponding author. Tel.: +98 811 8255301; fax: +98 811 8255963.

E-mail addresses: alrchoobin@sums.ac.ir (A. Choobineh), motamedzade@yahoo.com (M. Motamedzade), moghimb@yahoo.com (A. Moghimbeigi), heidaripahlavian@umsha.ac.ir (A. Heidari Pahlavian).