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COST-BENEFIT ANALYSIS OF ERGONOMIC PROGRAM FOR MANAGEMENT OF LOW BACK PROBLEMS AMONG OFFICE WORKERS

Abstract:

Low back problems are emerging as important work-related health disorders especially among computer office workers with substantial cost. The most prominent feature, of these conditions, is low back pain (LBP). The present study was designed to investigate low back problems among office workers in relation to ergonomic factors at work and to analyze cost-benefit of a suggested ergonomic program for management of this problem. A cross-sectional study was conducted in the office work department in a petroleum company in the Western desert. The study included 120 office workers. All participants were subjected to a predesigned questionnaire emphasizing occupational history, clinical examination, anthropometric measurements, and ergonomic checklist for subjective assessment. The LBP was defined whether non-specific, radiating, persistent specific, or chronic. A parallel objective assessment of the computer desk workstations ($n = 62$), which were shared by workers, was carried out by experienced ergonomists with the same previous checklist. Medical records were reviewed for assessment of the cost of low back problems in the years (2007-2009). The cost of a suggested ergonomic program was calculated for 3 years according to the market price in order to calculate cost-benefit ratio of such a program in prevention of LBP. Results showed that 61% of the examined workers gave history of LBP within the previous 3 years and clinical signs were detected in 32% of the workers. There were no significant differences between subjective and objective assessments of the different items scores of the ergonomic checklist. The lowest mean scores were reported for the chair and the work habits and training, both were negatively correlated with LBP intensity and duration. The suggested ergonomic program entails correction of the defective items to meet the standard ergonomic healthy criteria, provision of 6 periodic ergonomic training programs and enforcement of healthy work and life style habits. The final cost-benefit ratio of the ergonomic program for management of LBP among office workers of the present study was 1: 3.67 which is considered cost beneficial. Properly designed ergonomic programs are cost beneficial in management of LBP among office workers.

Keywords:

Cost-benefit analysis, Low back problems, Office workers, Ergonomics, Ergonomic checklist.