Are bio-psychosocial and individual work factors linked to upper limb musculo-skeletal disorders in computer workers?

Dr Gabriele Maria Schiffer, 2008

ABSTRACT

Objectives: The objectives of this study were (1) to investigate bio-psychosocial and individual risk factors associated with work related upper limb musculoskeletal disorders among computer workers, and (2) to examine the prevalence of upper limb musculoskeletal symptoms among computer users.

Design: An anonymous web-based structured questionnaire survey was carried out to obtain information from computer users with reference to the presence of musculoskeletal symptoms in association to individual, ergonomic and psychosocial risk factors. The questionnaire contained 8 content areas with a total of 55 items. Data were evaluated using descriptive statistics, cross-tabulation and binary logistic regression analysis.

Setting: The survey was conducted amongst Imperial College employees, South Kensington campus and involved a total of six departments (response rate 32%, n=277/865).

Results: The study indicated that musculoskeletal disorders among computer users were common. Shoulder and neck pain amongst both genders were found to be the highest pain complaint with 37.2% and 33.6%, respectively. Women were more likely to be affected than men in all musculoskeletal regions.

There was no strong linear association among the genders between the duration of computer work and musculoskeletal pain. Age and individual beliefs were not a significant predictor for pain for the total number of participants.

However an individual assessment of the female and male categories revealed that the male participants tended to have a more significant association between both risk factors (computer work-time and age) and musculoskeletal symptoms.
Upper limb leisure time activities tended to be considerably linked to musculoskeletal disorders, in particular among the men (men OR 1.23 - 4.09; female OR 1.24-1.62).

Ergonomic workplace issues caused various associations with diverse musculoskeletal regions. The most common correlations were reported for ‘other workstation concerns’ (men OR 1.21 -2.85; female OR 1.86-2.83).

The psychosocial domain showed high work demand, high job control and good social support amongst the participants. Psychosocial risk factors were not significant predictors for musculoskeletal disorders, as only minor correlations were evaluated. There was good evidence for an association between high social support in addition to high work control and a risk reduction of musculoskeletal morbidities in the presence of a high work demand environment.

**Conclusion:** The results of this study indicated that musculoskeletal symptoms were common among computer users, but the computer work-time, age and psychosocial factors were not continuous significant predictors for all musculoskeletal regions. The cause of musculoskeletal pain was probably attributed to bad ergonomics or pastime activities. However further studies are needed to:

- Evaluate ergonomics 'workstations concerns' by means of stronger study designs
- Identify interventions that would be able to reduce the prevalence rate.