A PROGRAM OF WORKING PLACE GYMNASTICS CONSIDERATIONS ON ERGONOMICS AND MUSCULOSKELETAL DISORDERS

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NTRODUCTION

Within EU27, about 25 % of workers complain of backache and about 23 % have reported muscular pain; therefore, Musculoskeletal Disorders (MSDs) are indeed the most frequently reported work-related health problem. MSDs are a cause of concern – not only because of the health effects on individual workers, but also because of the economic impact on business and social costs in European countries (OSHA, Factsheet 78, 2008). The administrative workers, regardless of the business they are involved in, have some factors in common: working seated without moving for a long time, using excessively certain muscles of the arm and hands, and keeping a poor body posture. These factors are the genesis of MSDs related to work, and result in discomfort and even pain. Sometimes, it is not possible to maintain a correct posture – because the equipment and furniture are poorly designed, or because the employee is addicted to a wrong posture. However, even when working under appropriate conditions, it is not good to maintain those positions for long periods. The muscle contraction kept for long hours also leads to discomfort or pain. The physical education professional can address this issues via effective prevention which highlights gym work.

OBJECTIVE

The aim of this study was to contribute to greater satisfaction and quality of life of the worker, through exploring synergisms between ergonomic design of the workplace and implementation of gym work in the daily routine of the worker.

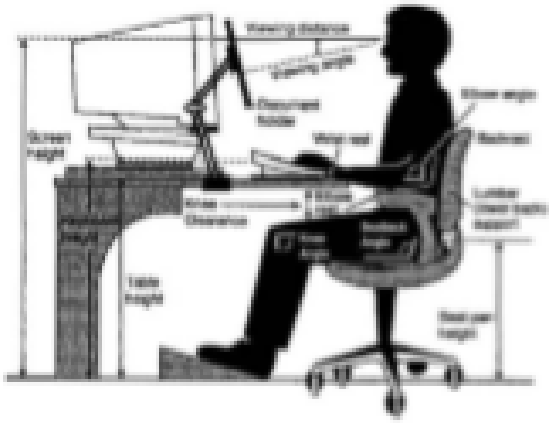
METHODOLOGY

SAMPLING: The study was conducted in the Department of Exhibitions and Events of the Business Association of Portugal (AEP). In this study, it was not possible to obtain a random sample, so a convenience sample was used instead – based on volunteer workers, involving 21 men and 28 women.

SURVEY: At the beginning of the study, a survey was applied in order to characterize physical and organizational work, and health of the sample

individuals – through their perceptions, in addition to identifying characteristics of the activity performed by the workers (Leite, 1992). After four months, the same survey was applied to assess the evolution of discomfort / pain complaints.

ERGONOMIC ASSESSMENT: Rapid Upper Limb Assessment (RULA) was applied (McAtamney & Corlett, 1993) to assess qualitatively the risk for MSDs. It was applied in three different days, for two times each day. Anthropometric dimensions and furniture measurements were taken, with the help of a tape and a set-square.



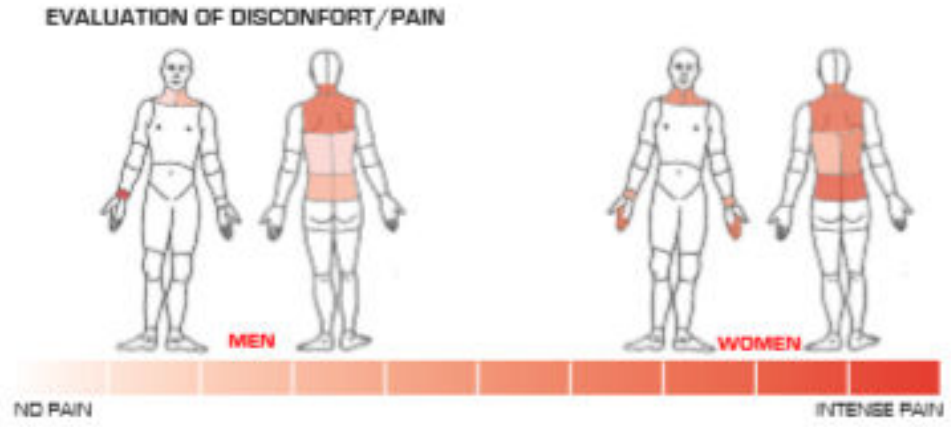
PROGRAM OF GYM WORK: After preliminary analysis of the survey results, a program of gym work was implemented the sessions were based on practice of motor activities 3 times a week for 15 minutes, in which the movements proposed were used to promote strengthening and stretching of the muscle, to allow workers maintain an appropriate posture, and develop their capacity for work; interventions were also introduced to activities that promote socialization.

DATA ANALYSIS: Statistical analysis of all data was performed by SPSS software v. 17.0. Parametric and non-parametric tests were used (depending on the normal behavior or not of the data (Kolmogorov–Smirnov, P=0,05).

RESULTS AND CONCLUSIONS

CHARACTERIZATION OF SAMPLE: Men were 44 ± 2 years, 173 ± 2 cm high, 75.3 ± 2.8 kg weight; 81% were right-handed in writing, 67% worked between 35 to 40 hours per week and 33% more than 40 h, and 76% did not change daily tasks. Women were 36 ± 2 years, 162 ± 1 cm high, 56.1 ± 1.2 kg weight; 89% were right-handed in writing, 75% worked between 35 to 40 hours per week and 25% work more than 40 h. Both genders often used 2 breaks of 5 minutes per day (52% men and 61% women), whereas about 14% and 21% never took a break, respectively. They usually went to work by car (91% of men and 83% of women) instead of bus (5% of men and 13% of women). The worker

seniority was around one decade (13.6±1.4 years for men and 10.8±1.2 for women). Only women showed absenteeism (7% from 10 to 24 days).



ERGONOMIC ASSESSSEMENT: Most RULA scores for movement and posture of arms and wrists (point A), or for neck, trunk and legs (point B) were 3 or 4. Therefore, there is a moderate risk that needs to be assessed in the medium run, associated with the tasks performed by this group of workers. Such a risk was statistically equal for both genders (Mann-Whitney Test, P=0,05). One also concluded that the office furniture of a large number of workers is not well designed; in most cases, it tended to be undersized. No statistically significant differences between genders were found (Man-Whitney test, P=0,44).

	Furniture dimension		
Percentage	Undersized	Well-sized	Oversized Man
Man	54,4	42,9	4,8
Woman	46,4	35,7	17,9

EFFECT OF GYM WORK PROGRAM: After four months of work gymnastic program, there was no significant decrease in the numbers of pain complaints (Wilcoxon test, P=0,06); although the significance level is very close to 5%, and the results show a tendency for improvement. Anyway, the execution of proposed exercises and the correction of previous postural defects were achieved.

Positive answers to discomfort /pain Percentage Before After Man 61.9 33.3 Woman 50,0 29.2 Finally, proper body awareness was successfully promoted – which in turn led to general relaxation, and aided in personal relationship among individuals and the work environment.

ACKOWLEDGEMENTS

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