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Enabling notebook ergonomics: Research informing practice

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Introduction

Worldwide,there is a growing body of evidence suggesting that university students are experiencing musculoskeletal discomfort with computer use similar to levels reported by adult workers.

Objective

The objective of the study was to investigate how university students use notebook computers.

Methods

Forty-eight participants were randomly assigned to one of four conditions. Each condition included participants completing baseline and post-study a health and comfort survey and ergonomics quiz. Computer usage software was installed on participants' notebook computer and all received participatory ergonomics training and external notebook accessories, e.g. keyboard and mouse. Participants in experimental conditions received an external notebook riser, an ergonomic computer workstation chair or an external desktop display. Each participant was loaned a personal digital assistant (PDA), which contained a 45-question survey. The PDA randomly "beeped" 7 times in a 24-hour day for the participants to complete a survey. Over the duration of the study (3 months) participants met with researchers and completed a weekly visual analog comfort scale where they rated their notebook computer workstation comfort.

Results

Participants self-reported notebook computer-related musculoskeletal discomfort comparable to those reported in other studies of computer use by university students as well as those by adults working in office environments. Notebook accessories and participatory ergonomics training appear to contribute to a trend of decreased self-reported notebook computer-related musculoskeletal discomfort in specific areas of the body of participants. The most common area of self-reported discomfort was the eyes.

Conclusion

Based on the study's results, a university-wide notebook computing education plan was initiated by an occupational therapist. To promote the health of future employees, universities are encouraged to increase the availability of informational reminders on computer ergonomics, create adaptable workstations in learning areas including dormitory rooms, and promote proactive problem solving. Occupational therapy can effectively contribute to this area of practice.