AN INVESTIGATION

INTO THE

APPLICATION OF ERGONOMIC PRINCIPLES

TO THE USE OF

DESKTOP KEYBOARD-OPERATED

COMPUTER TECHNOLOGY

WITHIN ORGANISATIONS

A Thesis submitted for the Degree of Doctor of Philosophy

Janet Kaye Sawyer

BA (Acc), Grad Dip T, M Ed Studies

Department of Public Health

The University of Adelaide

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ABSTRACT

Procedures for the ergonomic use of desktop computer technology are well documented. The design of computer workstations, positioning of the body, and ergonomic work practices have received a great deal of attention and the relevant ergonomic principles are extensively covered in books, manuals, information guides, and web sites. Despite the proliferation of material, however, there is a wide gap between theory and practice. This thesis investigates the reasons why by comparing the knowledge of practice, derived from four field studies at different times in different kinds of organisation, with the extensive literature on ergonomics that was available at the time.

The studies showed that levels of ergonomic knowledge and the priority given to ergonomic computer use were low, irrespective of location, but generally better in public-sector organisations. However, academic staff and post-graduate students reported least awareness of ergonomic principles, were least likely to have received training in ergonomics provided by their organisation, and experienced the highest proportion of physical health symptoms. Most workers did not know whether their organisation had written policies and procedures regarding the ergonomic use of computers. The majority believed ergonomic computer use was not given sufficient priority within their organisation and that they needed to spend more time in training on ergonomics. Most were satisfied with their job; the work was interesting and there was a variation of tasks. The work environments were generally supportive and the people had adequate job control, although urgencies and deadlines dominated the organisation of work. Overall, the respondents were methodical, thorough, conscientious people who demonstrated generally compliant behaviour in other health promotion areas.

It was concluded that the computer users would be more likely than not to apply ergonomic principles to their work if given appropriate information, training and encouragement. The findings highlighted the prevalence of non-ergonomic computer work and provided insights into the nature and extent of the computer-related health problems being experienced. They could have fuelled more commitment to ergonomic computer use within organisations and the development of a workplace culture that took this aspect of work safety seriously and put the proliferating information available into action.

DECLARATION

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by any other person, except where due reference has been made in the text.

I give my consent to this copy of my thesis, when deposited in the University Library, being available for loan and photocopying.

Janet Sawyer

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For Rod

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