Promoting healthy computer use: timing-informed computer health animations for prolonged sitting computer users

Sy-Chyi Wang#, Ciao Jiang# and Jin-Yuan Chern*

#Department of E-learning Design and Management, National Chiayi University, No. 85 Wenlong Village, Minxiong Township, Chiayi County 62103, Taiwan; *Department of Health Care Administration, Chang Jung Christian University, No. 396, Changrong Rd. Sec. 1, Gueiren District, Tainan 71101, Taiwan

(Received 5 April 2011; nal version received 16 May 2012)

Accompanying the increase in computer and Internet use worldwide, physical inactivity has become prevalent in most developed and developing countries. Extended computer use may contribute to symptoms such as visual impairment and musculoskeletal disorders. To reduce the risk of physical inactivity and promote healthier computer use, this study tries to develop a timed broadcast of health-related animations for users sitting at computers for prolonged periods. In addition, we examine the effects that the program has on the computer-related health beliefs and behaviour of participants. Before-and-after survey questionnaires were used for data collection. The results show that the animation program indeed had a positive effect when reminding participants to take a break and stretch their bodies. The program in uenced the beliefs and behaviours of participants with regard to their health. The development and examination were documented and discussed within the context of health agencies planning the next steps in an e ort to promote, develop and evaluate healthy computer use.

Keywords: animation; healthy computer use; physical activity; ergonomics; health promotion

Introduction

Accompanying the increase in computer and Internet use worldwide, physical inactivity has also become prevalent in most developed and developing countries (Adab and Macfarlane 1998). The development of modern technology brings convenience to our lives but removes physical activity from our daily routines, thereby putting our lives at risk. In fact, over the past decades the results from the Centers for Disease Control and Prevention (CDC) Behavioural Risk Factors Surveillance System show that more than 50% of American adults are not regularly active in physical activities (USDHHS 1996, CDC 2011). To date, even around 25 31% of adults each year reported no leisure-time physical activity (e.g. running, calisthenics, golf, gardening or walking) and the percentages stay as high as around 20% among the energetic 18 24 years old population. Comparatively, across the EU countries, an behaviours refer to not only people with lack of physical activity, but also those in prolonged sitting (Van U elen et al. 2010). A sedentary lifestyle is damaging to one's health by increasing the risk of premature death and the risk of developing obesity, heart disease, cancer and other chronic health problems (Manson et al. 2004, Ford et al. 2005, Warburton et al. 2006, Hamilton et al. 2007). Therefore, over three decades the US Department of Health and Human Services has been trying to reduce the prevalence of no leisure time activity for US adults by setting a national health objective in each 10-year Healthy People initiative (USDHHS 2011).

Physical activity

Epidemiological studies suggest that the amount of physical activity is more important than the intensity of activity. The majority of adults need to accumulate at least 30 minutes of moderate physical activity on most days. The most important benefit of regular physical activity is a reduced risk of heart disease and stroke. The minimum recommended amount of physical activity is at least 150 minutes per week of moderate intensity physical activity, or 75 minutes per week of vigorous intensity physical activity, or a combination of both moderate and vigorous activities (USDHHS 2011). In the US, the prevalence of adult physical activity has increased from 23% in 1997 to 27% in 2011 (Beighle et al. 2013). However, the prevalence of vigorous physical activity remains below 10% in both men and women (USDHHS 2011).