

A 2-year follow-up study of work ability among college educators

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Abstract

The aim of this study was to evaluate work ability among college educators before and after an intervention at the workplace. An administrative restructuring in the workplace started to be implemented in 2005. The work ability index (WAI) was administered to 154 educators before the restructure in 2004 and to 60 educators following the restructure in 2006. A *t*-test comparing the WAI score of the 60 educators who took part in both phases showed a trend of improving work ability ($p = 0.06$; mean WAI in 2004 was 41.7 and 43.3 in 2006). The results suggest that the intervention led to an improvement in psychosocial factors, which in turn positively influenced work ability.

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1. Introduction

Work ability is a dynamic process which results from the interaction of working conditions, individual characteristics and society (Ilmarinen et al., 1991; Ilmarinen and Costa, 2000; Ilmarinen, 2001; Pohjonen, 1999). Consequently, work ability may be influenced by time, location and population (Ilmarinen and Costa, 2000).

There are several ways to evaluate work ability ranging from clinical exams to subjective tests (Chan et al., 2000; Eskelinen et al., 1991; Ilmarinen and Costa, 2000; Perkiö-Mäkelä, 1999; Punakallio et al., 2004; Salonen et al., 2003). The Work Ability Index (WAI) is one of these subjective tests and it has been shown to predict work ability in a number of studies (Tuomi et al., 1991).

A recent Medline search with the keyword “work ability index” found 602 articles with the majority of these studies investigating work ability among workers with some type of disability. Only 59 studies were carried out with healthy

workers (Table 1). Among these studies, five had a longitudinal design that included an intervention. Three out of these studies were conducted in Finland (Pohjonen and Ranta, 2001; Nurminen et al., 2002; Smolander et al., 2000), one in China (Wu et al., 2006) and the other, in the Netherlands (De Boer et al., 2007). The size of the intervention groups in these studies varied from 26 to 83 workers and the interval of the re-evaluation varied from 1 to 5 years. The interventions in the Finnish studies included physical activity programs (Pohjonen and Ranta, 2001; Nurminen et al., 2002; Smolander et al., 2000), while the other studies utilized health education programs (Wu et al., 2006; De Boer et al., 2007). All of these studies reported an improvement in work ability with varying levels of results.

In summary, the observed interventions are related to health and functional capacity. However, Ilmarinen's group showed that the promotion of work ability is not only a result of health and functional capacity, but also involves other criteria such as work demand and work organization (Tuomi et al., 2001a,b).

Among educators, several studies have shown that features of work such as lack of support, bureaucracy, insufficient time to carry out tasks and workload have negative effects on health. These results have been confirmed by Sarmiento and colleagues (2004), Burke

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Table 1
Studies with healthy workers and work ability index

Country	Year (range)	<i>n</i> (range)	Type of study	Number of studies
Austria	1999	122	Cross-sectional	1
Bosnia and Herzegovina	2006	511	Cross-sectional	1
Brazil	1999–2006	54–996	Cross-sectional	10
China	1997–2007	80–10,218	Case-control study	1
			Cross-sectional	13
			Longitudinal	1
Finland	1991–2006	62–11,637	Case-control study	2
			Cross-sectional	7
			Longitudinal	13
			Review	1
Italy	2005–2006	867–25,976	Cross-sectional	1
			Longitudinal	1
Japan	2004	139	Cross-sectional	1
Netherlands	2002–2007	97–292	Longitudinal	2
Poland	2000–2006	187–198	Cross-sectional	3
Singapore	2000		Review	1
Total				59

and Greenglass (1993), Fong (1993) and Harri (1993). Sarmiento and colleagues (2004) observed that emotional exhaustion was strongly and negatively related to access to resources and support. These authors also suggested that higher levels of empowerment were associated with lower levels of burnout and greater job satisfaction.

Burke and Greenglass (1993) verified that work stressors were strong predictors of psychological burnout among educators. Fong (1993) in a study of nurse educators, observed a correlation between emotional exhaustion and a demanding job, time pressure and feelings of job inadequacy. It was also found that the demands of a job were the strongest predictors of emotional exhaustion. Harri (1993) identified several factors related to a reduction of well being among nurse educators. These included; excessive work, especially administrative duties, communication breakdowns with the directors of the nursing college and the underestimation by others of the value of teaching. Intervention countermeasures to change these characteristics, focusing on work demands and organization areas, may lead to an improvement in work ability.

The opportunity arose to examine work ability in a department that was undergoing an administrative restructure. Thus, we aim to evaluate the effects of an intervention on work ability. Given the paucity of intervention studies, this study may provide additional findings in this area.

2. Methodology

2.1. Research design

This study occurred in two phases. The first phase in 2004 identified a positive correlation between the psychosocial factors of job satisfaction and the work ability of the educators. These results contributed in part, to a decision to undertake an administrative restructure at the university

with the goal of reducing work dissatisfaction. After 2 years, the work ability of the educators was re-evaluated. Since the intervention applied to the entire department, a quasi-experimental design was used to examine the effectiveness of the intervention (pre-post design). Quasi-experiments are the preferred methodology in program/policy evaluation studies (Kleinbaum et al., 1982). A limitation of these designs, however, is less control over the influence of other confounding factors on the results.

2.2. Sample demographics

The first phase of data collection occurred in 2004. All faculty members were eligible to participate except staff working less than 1 year at the institution, those on extended sick and maternity leave, as well as people with non-teaching responsibilities (research activities, administrative tasks, etc.). The study was approved by the human ethics committee of the university. The survey was voluntary and confidential. Participants provided their consent by signing the information sheet.

The total population comprised 406 educators. They were contacted by phone or email and invited to participate in the survey. Those who choose to participate answered the survey at a place and time previously arranged by the researchers. Of the 406 educators, 154 participants volunteered to complete the survey (37.94%). There were no significant differences related to gender ($\chi^2 = 0.78$; $p = 0.38$) or seniority at work ($t = 1.14$; $p = 0.25$) between participants and non-participants. A significant difference was found for age ($t = 1.97$; $p = 0.05$), although the mean age for the population and the sample were similar (40.8 year old, SD = 8.8; 39.1 year old, SD = 8.0, respectively).

Sixty of the 154 educators studied in the first phase of the research were re-evaluated after 2 years (38.96%). However, this follow-up sample is representative of the original sample. No significant differences for age

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