Future Ways of Working?: Evaluation of sedentary behaviour in an activity based work environment

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1. Introduction

Sustained sitting, a specific form of sedentary behaviour, is known to be associated with increased risk of morbidity, independent of leisure time physical activity (Chau et al 2012, Owen et al 2010, van der Ploeg et al 2012). Office workplace exposure to sitting may add to this risk (Thorp et al 2011). Activity based working (ABW) is an emerging concept in office design in which workers share a common workspace consisting of diverse environment with the aim of accommodating a variety of office tasks. To date, no studies have evaluated the impact of ABW on worker sedentary behaviour and musculoskeletal discomfort.

The aim of the study was to evaluate the effect of Activity Based Work (ABW) environment on office worker’s activity levels, sedentary behaviours, musculoskeletal discomfort and work ability compared to their standard office environment.

2. Methods

89 office workers who moved to an ABW environment in Sydney CBD as part of 4 week trial volunteered to participate in the a non-randomised observational study. They completed questionnaires self-reporting workday sitting, leisure time physical activity (Occupational Sitting and Physical Activity Questionnaire, Workplace Sitting Questionnaire), musculoskeletal discomfort (Nordic Musculoskeletal Questionnaire) and work ability (Work Ability Index score) at baseline, end-intervention (final third of the trial in an ABW environment) and follow-up (one month after returning to normal work environment). At each measurement time point objective data was also gathered from participants using Actigraph tri-axial accelerometers (GT3X+) during work hours.

3. Results

Self-reported sitting showed a significant reduction in percent work day sitting (Baseline 78%, End-intervention 64%, Follow up 77%), complemented by an significant increase in percent work day standing (Baseline 10%, End-intervention 20%, Follow up 10%). These changes reverted at follow up when the participants resumed their original working environment. The accelerometer data showed no significant changes in percentage of sedentary behaviour. Accelerometer data showed a significant increase in the average daily steps while participants were working in the ABW environment (Baseline 3131, End-Intervention 3218, Follow- up 2879). Reported musculoskeletal discomfort over the last 7 days was significantly reduced from baseline to intervention by 26% then continued to reduce by a further 16% at follow up. The average work ability was rated as good at baseline (8.4) and Intervention (8.3) but dropped slightly when participants returned to original work space (7.8).

4. Discussion

Moving office workers to an activity based workplace appears to reduce self-reported sitting time and increase standing time; as well as have positive effects on musculoskeletal discomfort. Overall work ability was high and the employees were positive about working in an ABW environment.

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References


