

And the remaining four workshop could reach at 1.7044, 2.0238, 1.3152 and 1.2136 times respectively after adjusting each component according to the parameter. The adjusted data were put into the occupational input-output table and the prediction model was built.

Conclusion If the estimated annual output of a given year is known, after being converted to the total output value, the most suitable occupational health input and the largest occupational health output can be calculated.

1188 THE ASSOCIATION BETWEEN WORK-FAMILY SPILLOVER AND QUALITY OF SLEEP: A PROSPECTIVE STUDY OF JAPANESE WORKERS

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Introduction Quality of Sleep has been linked to poor health. While work-family spillover is associated with health problems and impaired work performance of workers, previous findings were inconsistent on, the association between work-family spillover and sleep quality. No study was conducted in non-western countries. The objective of this study was to investigate the prospective association between work-family spillover and sleep quality among Japanese workers.

Methods The database used in the study was from a 2 year prospective cohort study. In the baseline survey (T1) in 2011, questionnaires were sent to 1356 workers living in two wards of Tokyo, and 753 (56%) responded, and 489 completed all scales and items used the study. A follow-up survey was conducted in 2013, with 224 (46%) respondents out of the 489 completers at T1; 176 completed all scales. The questionnaire (both T1 and T2) included self-reported instruments of work-family spillover (the Survey Work-home Interaction-Nijmegen, SWING), sleep quality (Pittsburgh Sleep Quality Index, PSQI), and job stressors (Brief Job Stress Questionnaire, BJSQ), and demographic variables (age, sex, education, marital status, and work styles). Multiple linear regression analysis was employed of PSQI scores on SWING scale scores, adjusting for demographic variables and PSQI score at T1. (SPSS version 22)

Results Among the 176 completers, 36% were men; the average age was 39 years old. Work to family negative spillover (beta=0.20) significantly and positively correlated with sleep quality, after adjusting for the demographic variables (p=0.020). No significant association was observed between the other type of spillover (i.e. work to family positive, family to work positive or negative) and sleep quality. (p>0.05).

Conclusion This prospective study confirmed the association between work-family negative spillover and sleep quality in a sample of Japanese workers. Work to family negative spillover could be considered a target condition to improve sleep quality of workers.

1444 HEALTH LITERACY IN JAPANESE WORKPLACE (2ND REPORT): IMPACT OF WORKPLACE HEALTH PROMOTION, LESSONS LEARNED FROM THE PRACTICE

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Introduction Integration of Occupational Health and Safety (OHS) and Workplace Health Promotion(WHP) aiming at employees' health and well-being attracts attention in WHO's 'Healthy Workplace Framework' and NIOSH's 'Total Worker Health'. Also in Japan, WHP is actively conducted in many companies in trends, however there are few studies on the effectiveness of WHP in Japan. We examined the impact on its lifestyle and health literacy and success factors from the practical experience of WHP in a company.

Methods We reported OHS and WHP activities in an architectural consultant company for 15 years, and its impact in the pre-post comparison design to study its success factors.

Results OHS and WHP activities at the company began in 2001. It inducted occupational physician (OP)/OHS committee (2001); employment of occupational health nurse (OHN)/developed guidelines (2002); e-mail newsletters (2003); first health survey (2005), full-time employment of OHN(2006), healthy lunch box project (2007), OHSMS (2009); health policy (2011); health lecture/portal web-site (2012); mental health training/company sports festival (2013); health lecture by labour union(2014); gymnastics with the president/3rd health survey (2015), delivery of health lecture to each department (2016), etc. In the pre-post comparison of lifestyles using health survey, employees thinking nutrition balance (40→79%), having exercise habits (31→36%) and sufficient sleep (12→18%) increased, improving the employee's health literacy for four consecutive years from 2014 to 2017.

Conclusion A good impact on lifestyle and health literacy was obtained from 15 years of WHP. It was considered that success factors of WHP practice involving human resources including management/labour union are:

1. discovery of key persons highly interested in health,
2. existence of OHN,
3. corporate culture with good communication, and
4. clear management's commitment and health policy.

WHP will be increasingly important in Japan as ageing population and health disparities progress. Its important outcome is organisational and employee health literacy, so we want to continue the research to contribute to its improvement.

1567 FUTURE CHALLENGES FOR THE OCCUPATIONAL PHYSICIAN

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Introduction An economic and demographic transition with an ageing workforce, evolving work organisation and new emerging risks is combined with a shortage of Occupational Physicians (OPs). This study aims to propose recommendations for