Abstracts

EFFECTIVENESS OF AN AUDIT-BASED OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM CERTIFICATION ON FIRM INJURY RATES IN ALBERTA, CANADA

**Objective** To determine if achieving an audit-based occupational health and safety management system certification (OHSMS) is associated with lower firm-level lost-time injury rates.

**Methods** Firm-level workers’ compensation claims and OHSMS audit data were extracted from eligible industry sectors for the years 2000 to 2015. OHSMS and non-OHSMS firms were matched on observable baseline characteristics using coarsened exact matching methods. A difference-in-difference observational research design using popular-averaged negative binomial regression models estimated the effect (incidence rate ratios (IRR) with 95% confidence intervals) of OHSMS certification on firm lost-time injury rates, adjusting for confounders. Models were stratified by industry sector and type of OHSMS (certification for small versus large firms).

**Results** The cohort included 14,377 OHSMS firms matched to 11,338 non-OHSMS firms. Overall, OHSMS certification reduced lost time injuries (IRR: 0.86, 95% CI: 0.83–0.88), with a greater effect in 2011–15 (IRR: 0.79, 95% CI: 0.75–0.82). OHSMS certification was most effective in reducing injuries in the manufacturing (IRR: 0.75, 95% CI: 0.70–0.80), trade (IRR: 0.79, 95% CI: 0.73–0.86), and transportation (IRR: 0.80, 95% CI: 0.72–0.89) sectors. No effect was found in oil and gas (IRR: 1.05, 95% CI: 0.91–1.20), business (IRR: 0.89, 95% CI: 0.89–1.10) and forestry (IRR: 1.05, 95% CI: 0.83–1.33) sectors. OHSMS certification for small firms was not associated with a reduction in injuries (IRR: 0.98, 95% CI: 0.91–1.06) in contrast to OHSMS certification for large firms (IRR: 0.84, 95% CI: 0.82–0.87).

**Conclusions** OHSMS certification is effective in reducing firm injury rates. Effectiveness varied by sector, time period, and small or large firm certification. Sectoral differences in OHSMS effectiveness suggest that the ability to prevent hazards targeted by certification may vary by work environment. Further, small firm OHSMS certification may not be identifying safer firms.

HEALTH INEQUALITIES

INVESTIGATING THE DIFFERENCE OF WORK-RELATED HARMs IN NEW ZEALAND BY ETHNICITY

Trang Khieu*, Michelle Poland, Kirsten Lovelock. WorkSafe New Zealand, Wellington, New Zealand

10.1136/OEM-2019-EPI.178

In New Zealand about 10% of workers are harmed every year, with approximately 2 000 000 claims made to Accident Compensation Corporation (ACC) to cover the cost of injury and illness. Work-related injury and illness outcomes differ between ethnic groups. Māori (indigenous population) workplace fatality rates are 19% higher by industry and 10% higher by occupation than for non-Māori. According to Statistics New Zealand from 2002–2017, Māori were more likely to have higher rates of work-related claims than non-Māori. This study currently underway has used the Integrated Data Infrastructure (IDI) to look at different injury types and explore injury distribution between Māori and non-Māori in terms of age, sex, industry and occupation. WorkSafe applied to Statistics New Zealand (Stats NZ) for access to microdata in the IDI in July 2018 and was granted access in September 2018. In this study, data for people with accepted work-related ACC claims has been linked to 2013 Census to identify the industry that ACC claimants have worked in and their occupations. This data has then been linked to data on sex, age and ethnicity as recorded for the IDI population. Confidentiality of data in this study has followed Stats NZ’s output rules including random rounding to base 3, suppression and aggregation.

HEALTH-RELATED EDUCATIONAL DIFFERENCES IN DURATION OF WORKING LIFE AND LOSS OF PAID EMPLOYMENT: WORKING LIFE EXPECTANCY IN THE NETHERLANDS

Alex Burdorf*, Suzan Robroek. Erasmus Mc, Rotterdam, Netherlands

10.1136/OEM-2019-EPI.179

This study aims to provide insight into health-related educational differences in duration of working life by working life expectancy (WLE) and working years lost (WYL) through disability benefits and other non-employment states in the Netherlands.
Working Conditions and Health Behaviour as Causes of Educational Inequalities in Self-Rated Health: An Inverse Odds Weighting Approach

Jolinda Schram*, 1Joost Oude Groeniger, 1Merel Schuring, 3Karin Proper, 3Sandra van Osstom, 1Susan Robroek, 1Alex Burdorf, 1Erasmus Medical Centre Rotterdam, Department of Public Health, Rotterdam, Netherlands; 2Department of Public Administration and Sociology, Erasmus University, Rotterdam, Netherlands; 3Centre for Nutrition, Prevention and Health Services, National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands

Abstract

Background This study aims to estimate what extent working conditions and health behaviours mediate the increased risk of low educated workers to report a poor health.

Methods Respondents of the longitudinal Survey of Health, Ageing, and Retirement in Europe (SHARE) in 18 European countries were selected aged between 50 years and 64 years, in paid employment at baseline and with information on education and self-rated health (n=15,126). Health behaviours and physical and psychosocial work characteristics were measured at baseline, while self-rated health was measured at 2 year follow up. We used loglinear regression models and Inverse Odds Weighting causal mediation analysis to estimate the total effect of low education on self-rated health and to decompose the effect into natural direct (NDE) and natural indirect effects (NIE).

Results Lower educated workers were more likely to be in poor health compared to higher educated workers. The total effect of low education on self-rated health was RR=1.81 [95% CI 1.66–1.97]. For work conditions, having a physical demanding job was the strongest mediator, followed by lack of job control and lack of job rewards. NIE through working conditions was RR=1.16 [95% CI 1.06–1.25], explaining about 30% of educational inequalities in self-rated health. For health behaviour, body mass index and alcohol were the strongest mediators, followed by smoking. NIE though health behaviour was RR=1.14 [95% CI 1.07–1.20], explaining about 27% of educational inequalities in self-rated health.

Conclusions Preventive interventions focusing on reducing physical work demands as well as improving health behaviour may contribute to reducing educational inequalities in self-rated health among workers in Europe.