

rates were compared to provincial rates using standardized incidence ratios (SIR). Internal comparisons were made using Poisson regression to estimate age and birth year-adjusted incidence rate ratios (RRs) and 95% confidence intervals (CIs) for NMRDs. Stratified analyses were conducted for types of mining and ore mined.

Results The linked cohort of 30,413 males displayed significantly increased risks for COPD (SIR=2.65, CI=2.58–2.71), pulmonary fibrosis (SIR=2.02, CI=1.85–2.20), and silicosis (SIR=15.72, CI=14.55–20.65). Excesses of silicosis were observed for underground miners (SIR=17.41, CI=14.55–20.65), surface miners (SIR=19.58, CI=15.20–24.82) and mixed-ore miners (SIR=25.52, CI=20.98–30.76). Surface miners had an increased risk of silicosis compared to never surface miners. This risk increased with increasing duration of employment with the highest employment duration (≥ 10 years) yielding an RR of 3.49 (CI 1.69–7.21).

Conclusion Results are consistent with previous findings of an excess risk of respiratory disease (NMRD) among Ontario mine workers. This study provides increased understanding of these risks in relation to occupational factors and highlights a potentially overlooked increased risk of silicosis among surface mine workers in Ontario that bears further scrutiny. These results are supported by the unexpectedly high respirable crystalline silica exposures measured in Ontario mines surface operations as part of the related Ontario Mines Exposure Database (OMED). Together with the MMF the OMED exposure data provides future opportunities to test new hypotheses, including the impact of combined exposures among miners.

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A POPULATION PERSPECTIVE FOR THE PREVENTION OF OCCUPATIONAL ASTHMA (EUROPEAN COMMUNITY RESPIRATORY HEALTH SURVEY-ECRHS)

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10.1136/OEM-2021-EPI.128

Introduction About 15% of adult-onset asthma is attributed to occupational exposures.

Objectives We examined whether prevention policies focusing on high-risk occupations adequately identify occupational asthma risks at a population level. We estimated, in a prospective population-based study, the distribution of asthma risk by occupation, and examined whether asthma risk in prior defined high-risk occupations were distinguished from those of prior defined non-high-risk occupations.

Methods ECRHS is a multicentre cohort study; 9409 participants (52% female) from 13 countries were followed for 10 to 20 years. Incident asthma was assessed by repeated questionnaires on asthma symptoms and medication. We examined the incidence of asthma for each occupation relative to all other occupations during follow-up using Generalized Estimating Equation Poisson regression. On the basis of prior evidence, we classified occupations during follow-up into two asthma risk groups (high and non-high risk). All high-risk occupations had documented exposure to at least one high-risk asthmagen (Occupational Asthma-specific Job Exposure Matrix [JEM]). We compared the distributions of the estimated log Relative Risks (logRR) for each group limiting the

main analysis to 90 occupations with more than five incident cases.

Results The median logRR for the 14 prior defined high-risk occupations such as bakers, cleaners, and welders was higher (logRR=0.37) than the non-high risk occupations (logRR=0.06) (Mann-Whitney p-value=0.02). There was considerable overlap in the distributions of the logRRs by risk group (high risk, InterQuartileRange logRR 0.14–0.49; non-high risk IQR -0.21 to 0.36). Several non-high risk group occupations had significantly increased logRRs, including architects and receptionists.

Conclusion The significant overlap in risk curves by prior risk indicates that asthma-related exposures are prevalent and occur in multiple occupations. Current programs for occupational asthma prevention focus correctly on occupations at higher risk, but should also consider exposures in occupations not identified, a priori, as high risk.

Return to Work

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ASSOCIATIONS OF EMPLOYMENT SECTOR AND OCCUPATIONAL EXPOSURES WITH FULL AND PART-TIME SICKNESS ABSENCE: RANDOM AND FIXED EFFECTS ANALYSES ON PANEL DATA

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10.1136/OEM-2021-EPI.129

Introduction The contribution of work-related factors – such as employment sector and occupational exposures – to sickness absence is known to be strong. In addition to the potential causal mechanisms, the associations may also be affected by selection, i.e. individuals with characteristics associated with a high likelihood of sickness absences ending up in particular types of jobs.

Objectives We aimed to investigate the influence of unobserved individual characteristics in explaining the effect of work-related factors on full (fSA) and part-time sickness absence (pSA).

Methods We used register-based panel data for the period 2005–2016 on a 70% random sample of the Finnish working-age population. The relationships between employment sector and occupational exposures (% exposed to physically heavy work and job control score based on job exposure matrices) and the annual onset of fSA and pSA were investigated among men and women. First random effects (RE) models were applied controlling for observed sociodemographic factors and then fixed effects (FE) models, that examine within-individual changes over time and thereby further account for unobserved time-invariant individual characteristics.

Results In the RE analyses, public employment sector, physically heavy work and lower job control each increased the use of fSA and pSA among both genders. When unobserved individual characteristics were controlled for with the FE models, the effects on fSA attenuated. With pSA the effects of employment sector and physical heaviness of work among women even became reverse. The effect of lower job control on pSA remained specially among women.

Conclusions The role of individuals' unobserved characteristics in explaining the effect of work-related factors on sickness absence should not be neglected. The effects of work-related