Introduction The COVID-19 pandemic has profoundly challenged occupational safety and health. We assessed risk for hospitalization for COVID-19 in relation to potential routes and degree of occupational exposure.

Material and Methods The study includes 1 105 042 subjects in the county of Stockholm of age 18–64 years, with an occupational code, followed regarding hospitalization from 1 March 2020 until 15 September 2022. We used two different job-exposure matrices (JEMs), based on survey data (Office for National Statistics 2020) and expert assessment (Oude Hengel et al 2022, module for Denmark), respectively. Hazard ratios (HRs) and 95% confidence intervals (CI) were obtained with Cox’s proportional hazards models. Fully adjusted models included age, sex, vaccination (time-dependent), household size, living space per person, income quintile, proportion of smokers in the occupation, and country of birth.

Results We observed 6523 hospitalizations with COVID-19 as the main diagnosis. HRs increased incrementally with the exposure dimensions in both JEMs and were increased already from the low-exposed categories.

Conclusions Dimensions of potential occupational exposure in both the survey- and expert-based JEMs were consistently associated with hospitalization for COVID-19 and may thus guide risk assessment. Increased risks observed already in the lower exposure categories indicate a need for enhanced preventive measures also in those settings.

Sex- and gender-related issues

O-315 CAN TARGETED WORKPLACE WELLNESS INITIATIVES IMPROVE MENSTRUAL HYGIENE MANAGEMENT IN APPAREL FACTORIES?

Meryn Joseph, Bobby Joseph. Department of Community Health, St. John’s Medical College Hospital, India

Introduction Menstrual problems are an important contributor to poor productivity and sickness absenteeism in the garment industry even today. There are several socio-cultural barriers associated with menstruation which has led to a culture of silence surrounding its discussion.

Objectives 1. To assess the baseline knowledge regarding menstrual hygiene management among female employees working in selected apparel manufacturing industries in India. 2. To determine the change in knowledge and practices in menstrual hygiene and management following targeted workplace health trainings at the factories.

Method A before-after study design was followed to include 291 randomly chosen female employees between May-Dec 2022 from 15 apparel manufacturing factories across India. Baseline awareness and practices regarding menstrual hygiene was determined and the employees were provided a 4-module health training on menstrual hygiene management using the peer-peer educator model. Change in knowledge and practices were documented. Z-test of proportion was calculated.

Results Most of the 291 female employees were in the active reproductive age group of 20–35 years of age (78%). Only 122 women (41.9%) were aware about internal reproductive organs and only 31 (10.7%) of them know that menstrual blood originated from the uterus. Around 107 women (36.8%) knew about correct menstrual pad usage and disposal. Most women believed menstrual blood to be ‘impure’ and only 94 (32.3%) of them were aware about newer menstrual products.
like the reusable cloth pad and menstrual cup. Following the intervention, knowledge regarding reproductive organs, duration of menstruation, correct pad usage and disposal as well as newer menstrual hygiene products showed significant improvement (p < 0.01).

Conclusions Low awareness regarding menstrual hygiene management will impact health seeking behaviour and increase presenteeism at the workplace. A well-designed workplace health intervention to create awareness and dispel myths regarding menstruation shall result in adoption of healthy practices and a healthier workforce.

### Intervention studies

#### O-317 PRELIMINARY EVIDENCE OF PHYSICAL ACTIVITY INTERVENTIONS AT WORKPLACE ON COGNITIVE FUNCTIONS AMONG DESK-BASED EMPLOYEES

1. Baskaran Chandrasekaran, 2Chythra R Rao, 3Ashokan Arumugam, 4Arto J Pesola, 5Fiddy Davis, 6Department of Exercise and Sports Science, Manipal College of Health Professions, Manipal Academy of Higher Education, Manipal, Karnataka, India; 7Department of Community Medicine, Kasturba Medical College, Manipal Academy of Higher Education, Manipal, Karnataka, India; 8Physiotherapy Department, College of Health Sciences, University of Sharjah, Sharjah; 9Active Life Lab, Xamk – South-Eastern Finland University of Applied Sciences, Finland; 10Post Doc Research Fellow, MPR, School of Kinesiology, University of Michigan, Michigan, US

**Introduction**

Anecdotal evidence claims favourable effects of workplace physical activity interventions on cognitive function; however, there is a paucity of long-term randomised trials in real-time office settings.

**Objectives**

To investigate the effects of physical activity and sedentary behaviour interventions on cognitive functions of desk-bound office workers.

**Methods**

A cluster randomised controlled trial was conducted on desk-based office workers of various institutions of a university. Forty-seven participants were randomly allocated to one of the three interventions for a period of 24 weeks: (1) smartphone-based exercise prompts during working hours and pedometer-based step intervention (SMART); (2) usual work group (CONT). Accelerometer-based physical activity, reaction time and accuracy to cognitive tasks were assessed at baseline, 1st, 3rd and 6th month.

**Results**

A total of 44 participants (13 men and 32 women) who have completed at least one-month follow-up were analysed (SMART = 9; TRADE = 17; CONT = 18). A significant reduction in overall reaction time (20.41 ms; 95 CI 4.16, 36.61; P = 0.011), reaction time to congruent stimuli (21.24 ms, 95 CI 9.86 – 40.62, P = 0.034) and reaction time to incongruent stimuli (20.60 ms, 95 CI 1.27 – 39.92, P = 0.034) at 1st month was noted, but the differences turned insignificant at 3rd and 6th month. Nevertheless, the overall accuracy showed a significant improvement in the 3rd (0.84%), 95% CI 0.26 – 1.42, P < 0.001 and 6th month (0.94%, 95 CI 0.35 – 1.51, P < 0.001). Executive functions improved for intervention groups (TRADE and SMART) while remaining insignificant for CONT group.

**Conclusion**

Workplace physical activity and sedentary behaviour interventions improve cognitive functions during the initial intervention period while decaying in forthcoming months. While individual-based workplace interventions aid in short-term effects, there is an urge for robust organizational policies to sustain workplace cognitive well-being.

### Occupational epidemiology in Unorganized sectors

#### O-322 ASSESSING EXPOSURE TO DIESEL PARTICULATE MATTER OF TRUCK DRIVERS AND STREETSIDE VENDORS IN A HEAVILY INDUSTRIALISED CITY IN INDIA

1. Kamika Gupta, 2Rohit Bodhale, 3Apoonva Lambat, 4Victor Chung, 5Mohan Yellishetty, 6Harish Phuleria. 7NITB-Monash Research Academy and Environmental Science and Engineering Department, Indian Institute of Technology-Bombay, India; 8Environmental Science and Engineering Department, Indian Institute of Technology-Bombay, India; 9Department of Civil Engineering, Monash University, Australia

**Introduction**

Population in cities having major industrial activities such as coal mining, cement production, thermal power plants along with road transportation are exposed to high levels of fine particulate air pollution. Coal-haul truck drivers and street vendors can have significantly higher exposures higher risk of adverse health impacts due to diesel particulate matter (DPM), a class I carcinogen.

**Objectives**

The present study aims to examine the variability in fine PM and DPM exposures near a coal-haul road and city traffic road in a mining-dominated city in India to further estimate long-term exposure of truck drivers and street vendors to DPM.

**Method**

PM2.5 was measured during peak- and off-peak traffic hours over two weeks near a coal-haul road and a mixed-fleet city road near an active opencast coal mine in Eastern Maharashtra, India. Collected PM2.5 samples were analysed for elemental and organic carbon (EC-OC), a surrogate of DPM, using thermo-gravimetric analysis along with estimation of potential annual and cumulative life-term exposure using job history information.

**Results and Conclusion**

Average daily PM2.5 near coal-haul road was 592.7 ± 275.5 μg/m3 which was ~40% higher than the major city road and 7-folds higher than a background residential location. EC and OC were significantly higher during traffic peak hours at both the roads (haul road EC~30% higher than city road (p < 0.05)). ~80% of the fleet on the coal-road comprised of heavily loaded diesel trucks with open windows, thus severely affecting the drivers’ exposure to DPM. Street vendors are equally exposed to high EC and OC (more than 60% and 70% than urban background, respectively). Considering ~8–10 hours/day of work hours, truck drivers and street side vendors likely have high exposure to DPM. Additional analyses to characterise the fleet and vehicle density and their relationship with DPM exposure is currently underway.