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

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

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) workplace education manual (TRADE); and (3) 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

ASSESSING EXPOSURE TO DIESEL PARTICULATE MATTER OF TRUCK DRIVERS AND STREET VENDORS IN A HEAVILY INDUSTRIALISED CITY IN INDIA

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.