Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
Materials and methods: A detailed study of air movements, intake and return path was carried to find out measures to ensure adequate air exchanges. Additional air inlets with Dual PM10 filters were fixed on all air intake paths to reduce the pollutant level in air entering the building. The air handling unit at the institute was also fitted with special grade air filter for bringing down the PM2.5 level below 60. Special grade filters filtered the pollutants and reduced the pollutant level of air. An online air image sensor was installed to measure the quality of ambient air after filtration. Stand-alone air cleaner/ filter units were also installed in training halls, lobbies and waiting areas.

Result: Following modifications there was improvement in air quality by 90%. This resulted in building confidence level and provided a stress-free safe environment for employees working at the institute. Employees working at IIIPM confirmed reduction in eye irritation, headaches and fatigue due to air pollution.

Discussion: Installation of air filters inside the building helps in improving air quality which in turn prevents common health issues at workplace. This has prompted us to provide similar solutions in other office buildings in NC

155

The prevention from infection with COVID-19 of students in auditoriums through carbon dioxide measurements – an evidence from Estonian and Latvian high schools

Piia Tint 1, Valentina Urbane 2, Ada Traumann 3, Marina Järvis 4

1 TalTech, Business Administration, Tallinn, Estonia, 2 Riga Technical University, Safety Department, Riga, Latvia, 3 TTK University of Applied Sciences, Institute of Engineering and Circular Economy, Tallinn, Estonia, 4 Estonian Entrepreneurship University Applied Sciences, Management, Tallinn, Estonia

Introduction: Many studies focusing on the way how continually monitor COVID-19 infection risk indoors by verifying the efficiency of indoor ventilation and monitoring of CO2 (carbon dioxide) are published. In order to increase evidence of CO2 levels in schools and correlate them with the airborne spread of COVID-19 infection is the aim of the current study. When level of CO2 is low, there are no aerosols and viruses (COVID-19) that spread with finest particles.

Material and methods: Study includes CO2 measurements in four high schools in Estonia and Latvia. Additionally, questionnaire survey in order to explore students’ attitudes, perception towards health and safety, restrictions, information dissemination and risk awareness were conducted in three high schools in Estonia and one in Latvia, during autumn of 2019 and 2021. ANOVA statistics used for questionnaire (p<0.001, z=0.93).

Results: The high levels of CO2 inside the auditoriums (rooms) are related to the outside ones. Concentration of CO2 outside the buildings (2019) in towns was 500 ppm (measured near busy street), this decreased in 2020 (from 500 to 350 ppm) after COVID-19 Pandemic began and according to this, the CO2 decrease also indoors. Results of the study showed differences between high schools in Estonia and Latvia. Survey showed that students are more disciplined to follow demands in Latvia.

Conclusions: The study showed signals of getting virus in CO2-rich air. Several recommendations for studying environment and restrictions because of COVID-19 is provided based on the results.

Study reinforces prominent role of CO2 measurement in high schools.

156

The right to opt for natural ventilation (ventilation by opening windows) in the workplace strongly reinforced by the realities of the SARS-CoV-2 pandemic

Liliana Mammino

University of Venda, School of Mathematical and Natural Sciences, Thohoyandou, South Africa

Introduction: The presentation builds on previous papers about the right to choose between air conditioning-based ventilation and open-windows ventilation, above all to ensure that persons with high sensitivity to the factors causing sick building syndrome be given the possibility of avoiding them (an objective achieved by some firms through areas-partitioning). The SARS-CoV-2 pandemic has strongly highlighted the need for efficient air-recycling-free ventilation in indoor spaces, with experts emphasizing that opening windows is more effective for contagion prevention than the currently-ubiquitous disinfection. This work investigates selected features of the implementation of such recommendations.

Material and Methods: The study utilised online interviews with teachers (mostly, secondary schools) and some persons working in other set-up types. The interviews focused on the practice of opening windows when working in-person. Information on feasibility and challenges, as well as suggested recommendations, were collected.

Results and Conclusions: All the interviewed persons agree on the importance of opening windows, and practice it as much as possible under their work circumstances. They recommend the provision of extensive information at all levels, so that more students and co-workers can appreciate the practice. They hope that more attention is given to the indoor-air quality also after the end of the pandemic. Some discussions raised the point of the impact of poor indoor-air quality on the body’s resistance to pathogens causing respiratory diseases – an issue deserving thorough specific investigation by specialist.

10. INDUSTRIAL HYGIENE

157

Assessment of professional judgement in the field of occupational hygiene: comparison of expert and observed data distributions

David Lowry 1, Lin Fritschi 2, Ben Mullins 3, Rebecca O’Leary 3

1 Rio Tinto, Occupational Health, Perth, Australia, 2 Curtin University, School of Population Health, Perth, Australia, 3 Department of Primary Industries and Regional Development, Agriculture, Perth, Australia

The concept of professional judgement underpins the way in which an occupational hygienist assesses an exposure problem. Despite the importance placed on professional judgement in the discipline, a method of assessment to characterise accuracy has not been available. In this paper, we assess the professional