

IWH Research Alert
October 29, 2021

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***Furlan AD, Deldar Z, Berezin L, Clarke H, Bogden BJ, and Buchman DZ. An analysis of the# covidpain tweet chat during the first wave of the COVID-19 pandemic in 2020. *Cureus*. 2021; 13(10):e18871.**

<https://doi.org/10.7759/cureus.18871> [open access]

Abstract Introduction: In March 2020, we organized two tweet chats to discuss the COVID-19 pandemic and its impact on people affected by chronic pain. The objective of this study is to evaluate the #CovidPain tweet chat activities that took place at the early stages of the COVID-19 pandemic. Methods: We performed a quantitative analysis of the magnitude, range, engagement, and sentiment of each tweet chat. The data was extracted from Twitter and analyzed in Twitter Analytics and Symplur Signals using frequency and distributions. Then, we conducted a qualitative content analysis of the narrative tweets generated in response to the questions posted during the tweet chats. Results: The two tweet chats attracted 2305 participants, which generated 4351 tweets. The participants were healthcare providers, patient advocates, researchers/academics, and caregivers. COVID-19 had both negative and positive impacts. The negative consequences of COVID-19 included the reduction of physical activity, canceled appointments and treatments, more



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isolation, deterioration of preexisting mental health problems, and economic consequences. The positive consequences included efficient use of telemedicine, innovative methods for self-management, and at-home interventions. Conclusion: Twitter and tweet chats are useful in involving a diverse group of stakeholders for taking a deep dive into the topical issues relevant to a community that might be disproportionately affected by a public health crisis.

***Mawani FN, O'Campo P, and Smith P. Opportunity costs: underemployment and mental health inequities between immigrant and Canadian-born labour force participants: a cross-sectional study. Journal of International Migration and Integration. 2021; [epub ahead of print].**

<https://doi.org/10.1007/s12134-021-00896-0>

***Pentland V, Spilsbury S, Biswas A, Mottola MF, Paplinskie S, and Mitchell MS. Does walking reduce postpartum depressive symptoms? A systematic review and meta-analysis of randomized controlled trials. Journal of Women's Health. 2021; [epub ahead of print].**

<https://doi.org/10.1089/jwh.2021.0296>

Abstract: Background: Rising demands for traditional postpartum depression (PPD) treatment options (e.g., psychiatry), especially in the context of the COVID-19 pandemic, are increasingly difficult to meet. More accessible treatment options (e.g., walking) are needed. Our objective is to determine the impact of walking on PPD severity. Methods: A structured search of seven electronic databases for randomized controlled trials published between 2000 and July 29, 2021 was completed. Studies were included if walking was the sole or primary aerobic exercise modality. A random-effects meta-analysis was conducted for studies reporting PPD symptoms measured using a clinically validated tool. A simple count of positive/null effect studies was undertaken as part of a narrative summary. Results: Five studies involving 242 participants were included (mean age = ~28.9 years; 100% with mild-to-moderate depression). Interventions were 12 (n = 4) and 24 (n = 1) weeks long. Each assessed PPD severity using the Edinburgh Postnatal Depression Scale (EPDS), and was included in the meta-analysis. The pooled effect estimate suggests that relative to controls walking yielded clinically significant decreases in mean



EPDS scores from baseline to intervention end (pooled mean difference = -4.01; 95% CI: -7.18 to -0.84, I² = 86%). The narrative summary provides preliminary evidence that walking-only, supervised, and group-based interventions, including 90-120+ minutes per week of moderate-intensity walking, may produce greater EPDS reductions. Conclusions: While limited by a relatively small number of included studies, pooled effect estimates suggest that walking may help mothers manage PPD. This is the first-time walking as treatment for PPD, an exercise modality that uniquely addresses many barriers faced by mothers, has been summarized in a systematic way. Trial registration: PROSPERO (CRD42020197521) on August 16th, 2020.

***Wong IS, Quay B, Irvin E, and Belzer MH. Describing economic benefits and costs of nonstandard work hours: a scoping review. American Journal of Industrial Medicine. 2021; [epub ahead of print].**

<https://doi.org/10.1002/ajim.23302>

Abstract: BACKGROUND: The benefits of nonstandard work hours include increased production time and the number of jobs. While for some sectors, such as emergency services, around-the-clock work is a necessary and critical societal obligation, work outside of traditional daytime schedules has been associated with many occupational safety and health hazards and their associated costs. Thus, organizational- and policy-level decisions on nonstandard work hours can be difficult and are based on several factors including economic evaluation. However, there is a lack of systematic knowledge of economic benefits and costs associated with these schedules. METHODS: We conducted a scoping review of the methodology and data used to examine the economic benefits and costs of nonstandard work hours and related interventions to mitigate risks. RESULTS: Ten studies met all our inclusion criteria. Most studies used aggregation and analysis of national and other large datasets. Costs estimated include health-related expenses, productivity losses, and projections of future loss of earnings. Cost analyses of interventions were provided for an obstructive sleep apnea screening program, implementation of an employer-based educational program, and increased staffing to cover overtime hours. CONCLUSIONS: A paucity of studies assess nonstandard work hours using economic



terms. Future studies are needed to expand economic evaluations beyond the employer level to include those at the societal level because impacts of nonstandard work go beyond the workplace and are important for policy analysis and formulation. We pose the opportunity for researchers and employers to share data and resources in the development of more analyses that fill these research gaps

Andersen LL, Pedersen J, Sundstrup E, Thorsen SV, and Rugulies R. High physical work demands have worse consequences for older workers: prospective study of long-term sickness absence among 69 117 employees. Occupational & Environmental Medicine. 2021; 78(11):829-834.

<https://doi.org/10.1136/oemed-2020-107281> [open access]

Abstract: OBJECTIVE: This study investigates the role of age for the prospective association between physical work demands and long-term sickness absence (LTSA). METHODS: We followed 69 117 employees of the general working population (Work Environment and Health in Denmark study 2012-2018), without LTSA during the past 52 weeks preceding initial interview, for up to 2 years in the Danish Register for Evaluation of Marginalisation. Self-reported physical work demands were based on a combined ergonomic index including seven different types of exposure during the working day. Using weighted Cox regression analyses controlling for years of age, gender, survey year, education, lifestyle, depressive symptoms and psychosocial work factors, we determined the interaction of age with physical work demands for the risk of LTSA. RESULTS: During follow-up, 8.4% of the participants developed LTSA. Age and physical work demands interacted ($p < 0.01$). In the fully adjusted model, very high physical work demands were associated with LTSA with HRs of 1.18 (95% CI 0.93 to 1.50), 1.57 (95% CI 1.41 to 1.75) and 2.09 (95% CI 1.81 to 2.41) for 20, 40 and 60 years old (point estimates), respectively. Results remained robust in subgroup analyses including only skilled and unskilled workers and stratified for gender. CONCLUSION: The health consequences of high physical work demands increase with age. Workplaces should consider adapting physical work demands to the capacity of workers in different age groups



Basham C, Cerles A, Rush M, Alexander-Scott M, Greenawald L, Chiu S, et al. Occupational safety and health and illicit opioids: state of the research on protecting against the threat of occupational exposure. *New Solutions*. 2021; 31(3):315-329.

<https://doi.org/10.1177/10482911211039566>

Abstract: The nationwide opioid crisis continues to affect not only people who use opioids but also communities at large by increasing the risk of accidental occupational exposure to illicit opioids. In addition, the emergence of highly potent synthetic opioids such as fentanyl and carfentanil increases the need to protect workers who may encounter unknown drug substances during job activities. To support the National Institute for Occupational Safety and Health Opioids Research Gaps Working Group, we examined the state of the literature concerning methods to protect workers against accidental occupational exposure to illicit opioids, and have identified unmet research needs concerning personal protective equipment, decontamination methods, and engineering controls. Additional studies are needed to overcome gaps in technical knowledge about personal protective equipment, decontamination, and control methods, and gaps in understanding how these measures are utilized by workers. Increasing our knowledge of how to protect against exposure to illicit opioids has the potential to improve occupational health across communities

Gilardi L, Marino M, Fubini L, Bena A, Ferro E, Santoro S, et al. The community of practice: a method for cooperative learning of occupational health and safety inspectors. *European Journal of Investigation in Health, Psychology and Education*. 2021; 11(4):1254-1268.

<https://doi.org/10.3390/ejihpe11040091>

Abstract: BACKGROUND: Workplace injuries in Italy still occur despite laws and safety norms. We need to understand the causes rooted in the context and social conditions, and need to improve the practice of Occupational Safety and Health (OSH) inspectors of the Workplace Safety and Prevention Services (WSPS) of the Italian regional health boards. The aims of this study were to describe the setting up of a Community of Practice (CoP) for the production of best practices for injury prevention and to evaluate the motivation of OSH inspectors for participating in the CoP and the effects of CoP



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participation on their professional practice. **METHODS:** Two workplace injury stories underwent peer review during each CoP meeting. We evaluated the CoP using a focus group and a questionnaire. **RESULT:** Between 2014 and 2021, the CoP met in 18 workshops. Over the 8-year period, the CoP grew from 20 to 150 participants. Overall, 30 stories underwent peer review and were published on the institutional website. The focus group participants stated that the reasons why they participated in the CoP were the need to share experience and to tackle new challenges. **CONCLUSION:** The CoP was found to be useful for improving professional practice by strengthening professional identity and contributing to the production of new knowledge

Imboden R, Frey JJ, Bazell AT, Mosby A, Ware OD, Mitchell CS, et al. Workplace support for employees in recovery from opioid use: stakeholder perspectives. *New Solutions*. 2021; 31(3):340-349.

<https://doi.org/10.1177/10482911211043522>

Abstract: The dual challenges of COVID-19 and the opioid epidemic have heightened the need of Maryland workplaces for accessible resources and supports. This paper describes efforts of the Workplace PROSPER (Partnering to Reduce Opioid Stigma and Support Employment in Recovery) project team to explore opioid-related state employment needs from Key Stakeholder perspectives. Discussion revealed significant overlap between the needs identified by stakeholders and pre-existing recovery friendly initiatives in other states. However, this convening identified the need for increased training of medical professionals in communicating about work capacity and safety as well as for resources to support family members of individuals with Opioid Use Disorder and model programs for hiring individuals in recovery. Next steps include the creation and dissemination of a survey to obtain a broader base of feedback and the development of a robust set of online recovery resources for Maryland employers and employees

Ksinan Jiskrova G, Bobak M, Pikhart H, and Ksinan AJ. Job loss and lower healthcare utilisation due to COVID-19 among older adults across 27 European countries. *Journal of Epidemiology & Community Health*. 2021; 75(11):1078-1083.



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<https://doi.org/10.1136/jech-2021-216715> [open access]

Abstract: BACKGROUND: Older adults are at greater risk for becoming severely ill from COVID-19; however, the impact of the pandemic on their economic activity and non-COVID-19-related healthcare utilisation is not well understood. The aim of this study was to examine the prevalence and predictors of COVID-19-related unemployment and healthcare utilisation in a sample of older adults across 27 European countries. METHODS: We used data from the Survey of Health, Ageing and Retirement in Europe COVID-19 Survey, collected between June and August 2020. Participants (n=52061) reported whether they lost a job, forgone medical treatment and whether their appointment was postponed due to COVID-19. Three-level models were estimated for each outcome to test the effects of individual, household and country-level characteristics. RESULTS: The mean prevalence of reported job loss, and forgone and postponed medical care was 19%, 12% and 26%, respectively. Job loss was associated with female sex, lower education and household income, and older age in women. For example, the OR of job loss, comparing primary versus tertiary (college) education, was 1.89 (95% CI 1.59 to 2.26). Forgone and postponed medical care was associated with older age in men, female sex and higher education. At the country level, postponed medical care was associated with more stringent governmental anti-COVID measures. CONCLUSION: Job loss and lower healthcare utilisation for non-COVID-19-related reasons were common among older adults and were associated with several sociodemographic characteristics. Job loss appeared to disproportionately affect already economically vulnerable individuals, raising concerns about the exacerbation of social inequalities

Klevebro S, Bahram F, Elfstrom KM, Hellberg U, Hober S, Merid SK, et al. Risk of SARS-CoV-2 exposure among hospital healthcare workers in relation to patient contact and type of care. Scandinavian Journal of Public Health. 2021; 49(7):707-712.

<https://doi.org/10.1177/14034948211022434> [open access]

Abstract: AIM: We aimed to assess prevalence of IgG antibodies to severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) and factors associated with seropositivity in a large cohort of healthcare workers (HCWs). METHODS: From 11 May until 11 June 2020, 3981



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HCWs at a large Swedish emergency care hospital provided serum samples and questionnaire data. Presence of IgG antibodies to SARS-CoV-2 was measured as an indicator of SARS-CoV-2 exposure. RESULTS: The total seroprevalence was 18% and increased during the study period. Among the seropositive HCWs, 11% had been entirely asymptomatic. Participants who worked with COVID-19 patients had higher odds for seropositivity: adjusted odds ratio 1.96 (95% confidence intervals 1.59-2.42). HCWs from three of the departments managing COVID-19 patients had significantly higher seroprevalences, whereas the prevalence among HCWs from the intensive care unit (also managing COVID-19 patients) was significantly lower. CONCLUSIONS: HCWs in contact with SARS-CoV-2 infected patients had a variable, but on average higher, likelihood for SARS-CoV-2 infections

Lamb D, Gnanapragasam S, Greenberg N, Bhundia R, Carr E, Hotopf M, et al. Psychosocial impact of the COVID-19 pandemic on 4378 UK healthcare workers and ancillary staff: initial baseline data from a cohort study collected during the first wave of the pandemic. Occupational & Environmental Medicine. 2021; 78(11):801-808.

<https://doi.org/10.1136/oemed-2020-107276> [open access]

Abstract: Objectives: This study reports preliminary findings on the prevalence of, and factors associated with, mental health and well-being outcomes of healthcare workers during the early months (April-June) of the COVID-19 pandemic in the UK. Methods: Preliminary cross-sectional data were analysed from a cohort study (n=4378). Clinical and non-clinical staff of three London-based NHS Trusts, including acute and mental health Trusts, took part in an online baseline survey. The primary outcome measure used is the presence of probable common mental disorders (CMDs), measured by the General Health Questionnaire. Secondary outcomes are probable anxiety (seven-item Generalised Anxiety Disorder), depression (nine-item Patient Health Questionnaire), post-traumatic stress disorder (PTSD) (six-item Post-Traumatic Stress Disorder checklist), suicidal ideation (Clinical Interview Schedule) and alcohol use (Alcohol Use Disorder Identification Test). Moral injury is measured using the Moray Injury Event Scale. Results: Analyses showed substantial levels of probable CMDs (58.9%, 95% CI 58.1 to 60.8) and of PTSD



(30.2%, 95% CI 28.1 to 32.5) with lower levels of depression (27.3%, 95% CI 25.3 to 29.4), anxiety (23.2%, 95% CI 21.3 to 25.3) and alcohol misuse (10.5%, 95% CI 9.2 to 11.9). Women, younger staff and nurses tended to have poorer outcomes than other staff, except for alcohol misuse. Higher reported exposure to moral injury (distress resulting from violation of one's moral code) was strongly associated with increased levels of probable CMDs, anxiety, depression, PTSD symptoms and alcohol misuse. Conclusions: Our findings suggest that mental health support for healthcare workers should consider those demographics and occupations at highest risk. Rigorous longitudinal data are needed in order to respond to the potential long-term mental health impacts of the pandemic.

Lindstrom I, Lantto J, Karvala K, Soini S, Ylinen K, Suojalehto H, et al. Occupations and exposure events in acute and subacute irritant-induced asthma. Occupational & Environmental Medicine. 2021; 78(11):793-800.

<https://doi.org/10.1136/oemed-2020-107323> [open access]

Abstract: BACKGROUND: Exposures leading to irritant-induced asthma (IIA) are poorly documented. METHODS: We retrospectively screened the medical records of patients with IIA diagnosed in an occupational medicine clinic during 2000-2018. We classified the cases into acute (onset after single exposure) and subacute (onset after multiple exposures) IIA. We analysed in detail, occupations, causative agents and their air levels in the workplace, exposure events and the root causes of high exposure. RESULTS: Altogether 69 patients were diagnosed with IIA, 30 with acute and 39 with subacute IIA. The most common occupational groups were industrial operators (n=23, 33%), metal and machinery workers (n=16, 11%) and construction workers (n=12, 8%). Among industrial operators significantly more cases had subacute IIA than acute IIA (p=0.002). Forty cases (57%) were attributable to some type of corrosive acidic or alkaline chemical. Acute IIA followed accidents at work in different types of occupation, while subacute IIA was typical among industrial operators performing their normal work tasks under poor work hygiene conditions. The most common root cause was lack of information or false guidance in acute IIA (n=11, 36%) and neglect of workplace hygiene measures in subacute IIA (n=29, 74%). CONCLUSIONS: Accidents are the main causes of acute IIA,



whereas subacute IIA can develop in normal work in risk trades with poor work hygiene. Airborne strong acids or bases seem to be the most important causative agents of acute and subacute IIA. The different risk profiles of acute and subacute IIA should be considered in the prevention and identification of the cases

Madigan C, Johnstone K, Way KA, and Capra M. How do safety professionals' influence managers within organizations? A critical incident approach. Safety Science. 2021; 144:105478. <https://doi.org/10.1016/j.ssci.2021.105478>

Niedhammer I, Bertrais S, and Witt K. Psychosocial work exposures and health outcomes: a meta-review of 72 literature reviews with meta-analysis. Scandinavian Journal of Work, Environment & Health. 2021; 47(7):489-508.

<https://doi.org/10.5271/sjweh.3968> [open access]

Abstract: OBJECTIVE: This meta-review aimed to present all available quantitative pooled estimates for the associations between psychosocial work exposures and health outcomes using a systematic literature review of literature reviews with meta-analysis. METHODS: A systematic review of the literature from 2000 to 2020 was conducted using PubMed, Web of Science, Scopus, and PsycINFO databases following the PRISMA guidelines. All literature reviews and Individual-Participant Data (IPD)-Work consortium studies exploring an association between psychosocial work exposures and health outcomes and providing pooled estimates using meta-analysis were included. All types of psychosocial work exposures and health outcomes were studied. The quality of each included review was assessed. RESULTS: A total of 72 reviews and IPD-Work consortium studies were included. These mainly focused on job strain as exposure and cardiovascular diseases and mental disorders as outcomes. The associations between psychosocial work factors and cardiovascular diseases and mental disorders were in general significant, and the magnitude of these associations was stronger for mental disorders than for cardiovascular diseases. Based on high-quality reviews, significant associations were found between job/high strain and long working hours as exposures and coronary heart diseases, (ischemic) stroke, and depression as outcomes. A few additional significant associations involved other exposures and



health outcomes. **CONCLUSIONS:** The included reviews brought convincing findings on the associations of some psychosocial work factors with mental disorders and cardiovascular diseases. More research may be needed to explain these associations, explore other exposures and outcomes, and make progress towards determining the causality of the associations

Prakash KC, Virtanen M, Kivimaki M, Ervasti J, Pentti J, Vahtera J, et al. Trajectories of work ability from mid-life to pensionable age and their association with retirement timing. *Journal of Epidemiology & Community Health*. 2021; 75(11):1098-1103. <https://doi.org/10.1136/jech-2021-216433>

Abstract: **BACKGROUND:** This study aimed to identify the trajectories of work ability over 16 years preceding the individual pensionable age and to examine the association with retirement timing. **METHODS:** The study population consisted of 2612 public sector employees from the Finnish Retirement and Aging study and the Finnish Public Sector study. Participants were grouped into 'no-extension' (retired at the individual pensionable date or worked no longer than 6 months after that date) and 'extension' (worked more than 6 months after individual pensionable age). Trajectories of self-reported work ability score (0-10) in maximum of eight measurement points over 16 years preceding retirement were examined using the group-based latent trajectory analysis. Log-binomial regression was used to analyse the association between trajectory groups and extended employment. **RESULTS:** Four stable ('Stable excellent', 7%; 'Stable high', 62%; 'Stable medium', 24%; 'Low', 4%) and one decreasing ('Declining', 3%) work ability trajectories were identified. After taking into account gender, age, occupational status, marital status and self-rated health, 'Stable excellent' trajectory was associated with a higher likelihood of extended employment compared with the 'Low' (risk ratio (RR) 2.38, 95% CI 1.21 to 4.68) and to the 'Declining' (RR 2.82, 95% CI 1.32 to 6.01) trajectories. There was no difference in retirement timing between 'Declining', 'Low' and 'Stable medium' trajectories. **CONCLUSION:** Work ability remained relatively stable among majority of the participants over 16 years of follow-up. Stable excellent work ability from mid-life to late career was associated with higher likelihood of extending



employment beyond individual pensionable age than those with low or declining work ability

Rabinowitz P, Galusha D, Cantley LF, Dixon-Ernst C, and Neitzel R. Feasibility of a daily noise monitoring intervention for prevention of noise-induced hearing loss. Occupational & Environmental Medicine. 2021; 78(11):835-840.

<https://doi.org/10.1136/oemed-2020-107351>

Abstract: **BACKGROUND:** Despite the existence of hearing conservation programmes complying with regulatory standards, noise-induced hearing loss (NIHL) remains one of the most prevalent occupational diseases. Compulsory daily monitoring of noise exposure has been associated with decreased NIHL risk. We report on the experience of a voluntary daily noise monitoring intervention among noise-exposed workers. **METHODS:** Workers at three locations of a metals manufacturing company voluntarily used an in-ear noise monitoring device that could record and download, on a daily basis, the noise exposure inside of their hearing protection. We compared the hearing loss rates (in decibels hearing level/year) in these volunteers to controls from the same company matched for job title, age, gender, race, plant location, and baseline hearing level. **RESULTS:** Over the follow-up period, 110 volunteers for whom controls could be identified monitored daily noise exposures an average of 150 times per year. Noise exposures inside of hearing protection were lower than ambient noise levels estimated from company records. While there was no significant difference in hearing loss rates between volunteers and controls, volunteers downloading exposures 150 times per year or had less hearing loss than those who downloaded less frequently. **CONCLUSION:** These results indicate that voluntary daily noise exposure monitoring by workers is feasible and that greater frequency of downloading is associated with less hearing loss. If further development of noise monitoring technology can improve usability and address barriers to daily use, regular self-monitoring of noise exposure could improve the effectiveness of hearing conservation programmes. **TRIAL REGISTRATION NUMBER:** NCT01714375

Restrepo J and Lemos M. Addressing psychosocial work-related stress interventions: a systematic review. Work. 2021; 70(1):53-



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<https://doi.org/10.3233/WOR-213577>

Abstract: **BACKGROUND:** Work-related stress can be defined as an individual's reactions to work characteristics and indicates a poor relationship between coping abilities and work environment. If unmanaged, stress can impact mental and physical health (e.g., causing depression and cardiovascular disease). Many individuals use maladaptive stress-coping strategies, such as sedentary activities, unhealthy eating behaviors, and alcohol consumption, which do not contribute to long-term stress management. In contrast, stress reduction programs can help people manage and effectively reduce stress in the long term. **OBJECTIVE:** To gather the state of the art of work-related stress interventions, their efficacy and applications. **METHOD:** The PsycINFO and EBSCOHost databases were used. The search was carried out between January 28 and March 30, 2019. Inclusion criteria were full text available, text in English or Spanish and a study population comprising workers. **RESULTS:** Twenty-nine articles that included interventions involving aromatherapy, bibliotherapy, cognitive-behavioral therapy, exercise, alternative medicine, mindfulness, technology, stress management and sensory intervention were analyzed. The interventions showed significant reductions in stress, anxiety, depression and burnout; however, most of the studies were not based on specific stress models, and control groups often received no intervention whatsoever. As a result, it is challenging to draw conclusions regarding the success of the interventions, especially if they are novel. **CONCLUSION:** The results suggest that there is a broad portfolio of successful interventions regarding work-related stress. Most of the successful interventions were based on mindfulness; however, aerobic exercise and bibliotherapy may also be successful. The structure and level of evidence appear to be very relevant to the development of a successful intervention

Sonkor MS and de Soto BG. Operational technology on construction sites: a review from the cybersecurity perspective. Journal of Construction Engineering and Management. 2021; 147(12):04021172.

[https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0002193](https://doi.org/10.1061/(ASCE)CO.1943-7862.0002193) [open access]



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Abstract: The digital transformation in the construction industry affects how information is exchanged and disrupts the way construction sites operate. The levels of operational technology (OT) to control and monitor site activities by utilizing robotic, autonomous, and remotely controlled machines raise cybersecurity concerns. As construction sites are places where humans and machines work together, the potential safety outcomes of cybersecurity vulnerabilities are magnified. This study's motivation was to understand the current state of the art and identify gaps to suggest future directions regarding OT in construction from the cybersecurity perspective. To achieve that, a bibliometric analysis was conducted. The analysis utilized the Scopus database to retrieve related publications and VOSviewer version 1.6.15 software to visualize bibliometric networks. Main research themes were identified, and each theme was reviewed from a cybersecurity perspective. The limitations of the analysis include the lack of industry-based categorization, the domination of publications focusing on the cybersecurity of industrial control systems (ICSs), and the set of keyword combinations used for the literature search that could be expanded to cover a broader range of research topics. The findings reveal the lack of focus on the construction phase in the construction cybersecurity research. Moreover, cybersecurity aspects are absent in the construction automation studies, and there is a need for bespoke threat modeling and intrusion detection systems for all the phases of construction projects. Suggestions for further research on the potential threats against the construction phase are provided. Future directions include possible adaptations of the available cybersecurity frameworks considering the utilization of OT on construction sites and investigating the methods to evaluate security levels on construction sites and countermeasures against cyberattacks.

Stjernbrandt A, Stenfors N, and Liljelind I. Occupational cold exposure is associated with increased reporting of airway symptoms. International Archives of Occupational & Environmental Health. 2021; 94(8):1945-1952.

<https://doi.org/10.1007/s00420-021-01694-y> [open access]

Abstract: Objective: To determine if exposure to cold environments, during work or leisure time, was associated with increased reporting of airway symptoms in the general population of northern Sweden.



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Methods: Through a population-based postal survey responded to by 12627 subjects, ages 18-70, living in northern Sweden, the occurrence of airway symptoms was investigated. Cold exposure during work or leisure time was self-reported on numerical rating scales. Binary logistic regression was used to determine the statistical association between cold exposure and airway symptoms. Results: For currently working subjects (N = 8740), reporting any occupational cold exposure was associated to wheeze (OR 1.3; 95% CI 1.1-1.4); chronic cough (OR 1.2; 95% CI 1.1-1.4); and productive cough (OR 1.3; 95% CI 1.1-1.4), after adjusting for gender, age, body mass index, daily smoking, asthma, and chronic obstructive pulmonary disease. Leisure-time cold exposure was not significantly associated to reporting airway symptoms. Conclusions: Occupational cold exposure was an independent predictor of airway symptoms in northern Sweden. Therefore, a structured risk assessment regarding cold exposure could be considered for inclusion in the Swedish workplace legislation.

Zusman EZ, Kapanen AI, Klaassen A, and Reardon J. Workplace cardiovascular risk reduction by healthcare professionals: a systematic review. Occupational Medicine. 2021; 71(6-7):250-256.

<https://doi.org/10.1093/occmed/kqab104>

Abstract: BACKGROUND: Cardiovascular disease has a significant impact on public health and is largely preventable by addressing modifiable risk factors. As most adults spend on average half of their waking hours at work, this provides a significant opportunity to address modifiable risk factors through health promotion interventions. Healthcare professionals have the knowledge and skills to provide workplace interventions aimed at cardiovascular risk reduction. AIMS: This study was aimed to assess the literature regarding the effect of workplace interventions led by healthcare professionals on cardiovascular risk factors. METHODS: Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, MEDLINE, PsycINFO and SPORTDiscus were systematically searched from inception to March 2021. Included studies evaluated impact of workplace interventions by healthcare professionals on cardiovascular health. Data on study design, baseline characteristics, interventions, outcomes and conclusions were extracted and



qualitatively analysed. RESULTS: Forty-five studies representing 77 633 participants were included in the analysis. Healthcare professionals involved included: nurses, nurse practitioners, physicians, dietitians, pharmacists, physician assistants, medical technicians/emergency medical technicians and physiotherapists. Workplace interventions by healthcare professionals generally improved surrogate markers of cardiovascular health. Success varied based on provider and nature of the intervention. Addressing motivation and including follow-up were key factors for successful intervention to reduce cardiovascular risk factors. CONCLUSIONS: Workplace health promotion initiatives delivered by healthcare professionals may improve cardiovascular risk markers if they are evidence based and customized for target populations. More research is needed to determine clinical relevance of interventions and ideal interventions for specific employee groups

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