



# Emerging Evidence Alert

April 2022

This Emerging Evidence Alert includes the latest peer-reviewed articles, reports and evidence on a range of workplace health and safety, prevention, recovery at work and return to work topics. It provides a review of recent journal articles and relevant content related to Comcare's five research themes: Fostering Work Participation; Building Employer Capability; Adapting to the Future of Work; Guiding and Supporting Mental Health and Wellbeing; and Enabling Healthy and Safe Workplaces. Collated articles were published in March 2022 only.

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## Monthly research highlight

### Working from home and expectations of being available

Working from home arrangements are now common in many workplaces, and while there are many benefits, including flexibility and work-life balance, there are still many challenges for employers and workers.

A [Norwegian study](#) undertaken prior to the COVID-19 pandemic found that both working from home and expectations of availability had an influence on worker perceptions of their work environment, wellbeing, health and organisational commitment.

The research found availability expectations while working from home are associated with increases in negative work consequences, including:

- higher levels of work demand
- role conflicts
- physical health (such as neck pain)
- mental distress
- lower levels of co-worker support.

The study highlights the need for improving awareness of working from home risks and preventative approaches that aim to improve health and wellbeing. Comcare has guidance for employers and workers in [striking the balance with flexible work](#), along with other [working from home resources](#).



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## Description of Evidence Levels Definitions Used in this Review

1. **Level of Evidence** – Certain study designs are scientifically stronger at answering a question. The scoring hierarchy we provided is presented below.

Level of Evidence	Description
Level 1	Evidence from a systematic review or meta-analysis of relevant studies.
Level 2	Evidence from a randomised controlled trial
Level 3	Evidence from a controlled intervention trial without randomisation (i.e. quasi-experimental).
Level 4	Evidence from a case-control or cohort study.
Level 5	Evidence from a single case study, a case series, or qualitative study.
Level 6	Evidence from opinion pieces, reports of expert committees and/or from literature reviews (scoping or narrative).

2. **Relevance** – Research carried out in Australia or similar countries is most relevant to Australian readers.

Level	Description
A	Study conducted in Australia or the study has been conducted outside Australia but confounders unlikely to affect relevance
B	Study conducted outside Australia and confounders likely to affect generalisability

## Fostering Work Participation

### Return to Work

*This month, studies explore a smartphone app to support return to work in workers with chronic pain, and the return to work profile of workers with mental health problems and those who spent time in intensive care.*

#### **Development of a digital support application with evidence-based content for sustainable return to work for persons with chronic pain and their employers: User-centered agile design approach**

**Background:** Persons with chronic pain experience a lack of support after completing rehabilitation and the responsibility for the return-to-work (RTW) process is taken over by the employer. In addition, employers describe not knowing how to support their employees. Smartphone apps have been increasingly used for self-management, but there is a lack of available eHealth apps with evidence-based content providing digital support for persons with chronic pain and their employers when they return to work. **Objective:** This study aims to describe the development of a digital support application with evidence-based content that includes a biopsychosocial perspective on chronic pain for sustainable RTW for persons with chronic pain and their employers (SWEPPPE [Sustainable Worker Digital Support for Persons With Chronic Pain and Their Employers]). **Methods:** A user-centered agile design approach was applied. The multidisciplinary project team consisted of health care researchers, a user representative, and a software team. A total of 2 reference groups of 7 persons with chronic pain and 4 employers participated in the development process and usability testing. Mixed methods were used for data collection. The design was revised using feedback from the reference groups. The content of SWEPPPE was developed based on existing evidence and input from the reference groups. **Results:** The reference groups identified the following as important characteristics to include in SWEPPPE: keeping users motivated, tracking health status and work situation, and following progress. SWEPPPE was developed as a smartphone app for the persons with chronic pain and as a web application for their employers. SWEPPPE consists of six modules: the action plan, daily self-rating, self-monitoring graphs, the coach, the library, and shared information with the employer. The employers found the following functions in SWEPPPE to be the most useful: employees' goals related to RTW, barriers to RTW, support wanted from the employer, and the ability to follow employees' progress. The persons with chronic pain found the following functions in SWEPPPE to be the most useful: setting a goal related to RTW, identifying barriers and strategies, and self-monitoring. Usability testing revealed that SWEPPPE was safe, useful (ie, provided relevant information), logical, and easy to use with an appealing interface. **Conclusions:** This study reports the development of a digital support application for persons with chronic pain and their employers. SWEPPPE fulfilled the need of support after an interdisciplinary pain rehabilitation program with useful functions such as setting a goal related to RTW, identification of barriers and strategies for RTW, self-monitoring, and sharing information between the employee and the employer. The user-centered agile design approach contributed to creating SWEPPPE as a relevant and easy-to-use eHealth intervention. Further studies are needed to examine the effectiveness of SWEPPPE in a clinical setting.

**Tureson et al. 2022.**

**JMIR Human Factors**, vol. 9, no. 1.

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**Keywords:** Agile design process; chronic pain; digital support; eHealth; mobile phone; return to work; self-management; smartphone apps; user-centered design.

**Evidence Level:** 5B

**Link:** <https://humanfactors.jmir.org/2022/1/e33571/>

#### **Employment status and its associated factors for patients 12 months after intensive care: Secondary analysis of the SMAP-HoPe study**

**Background:** Returning to work is a serious issue that affects patients who are discharged from the intensive care unit (ICU). This study aimed to clarify the employment status and the perceived household financial status of ICU patients 12 months following ICU discharge. Additionally, we evaluated whether there exists an association between depressive symptoms and subsequent unemployment status.

**Methods:** This study was a subgroup analysis of the published Survey of Multicenter Assessment with Postal questionnaire for Post-Intensive Care Syndrome for Home Living Patients (the SMAP-HoPe study) in Japan. Eligible patients were those who were employed before ICU admission, stayed in the ICU for at least three nights between October 2019 and July 2020, and lived at home for 12 months after discharge. We assessed the employment status, subjective cognitive functions, household financial status, Hospital Anxiety and Depression Scale, and EuroQOL-5 dimensions of physical function at 12 months following intensive care. **Results:** This study included 328 patients, with a median age of 64 (interquartile range [IQR], 52-72) years. Of these, 79 (24%) were unemployed 12 months after ICU discharge. The number of patients who reported worsened financial status was significantly higher in the unemployed group ( $p < 0.01$ ) than in the employed group. Multivariable analysis showed that higher age (odds ratio [OR], 1.06; 95% confidence interval [CI], 1.03-1.08) and greater severity of depressive symptoms (OR, 1.13 [95% CI, 1.05-1.23]) were independent factors for unemployment status at 12 months after ICU discharge. **Conclusions:** We found that 24.1% of our patients who had been employed prior to ICU admission were subsequently unemployed following ICU discharge and that depressive symptoms were associated with unemployment status. The government and the local municipalities should provide medical and financial support to such patients. Additionally, community and workplace support for such patients are warranted.

**Unoki et al. 2022.**

**PLoS One, vol. 17, no. 3.**

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**Keywords:** Intensive care unit; ICU; employment status; factors.

**Evidence Level:** 5B

**Link:** <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0263441>

### Identifying return to work self-efficacy trajectories in employees with mental health problems

**Background:** Return to work self-efficacy (RTW-SE) is a strong predictor of return to work (RTW) in employees with mental health problems (MHPs). However, little is known about the development of RTW-SE during the RTW process. In this study, we aimed to identify RTW-SE trajectories in the year following sick leave in employees with MHPs and provided a description of the trajectories in terms of personal and work characteristics, and RTW status. **Methods:** This multi-wave study included 111 employees with MHPs. RTW-SE was measured at baseline, and at 3, 6, and 12 months follow-up with the RTW-SE scale for employees with MHPs. **Results:** Latent class growth analysis revealed six trajectories. In three trajectories employees had increasing RTW-SE scores, namely (class 1) low start, moderate increase, (class 3) moderate start, small increase and (class 5) moderate start, steep increase. The other trajectories were defined by (class 2) persistently high, (class 6) persistently low, and (class 4) decreasing RTW-SE scores over time. Employees across the various trajectories differed significantly with respect to RTW status, and personal and work characteristics measured at baseline, including age, gender, and type of MHP. Less favorable trajectories (class 4 and 6) were characterized by higher age, a higher prevalence of anxiety disorder and lower RTW rates. The most favorable trajectory (class 2) was characterized by a higher proportion of stress-related disorders and less major depression diagnoses. **Conclusions:** Large heterogeneity exists in terms of RTW-SE trajectories in employees with MHPs and significant differences were found across the trajectories regarding personal and work characteristics, and RTW status. Insights into RTW-SE trajectories and their attributes are important to advance more effective and personalized RTW treatment for employees with MHPs.

**Horn et al. 2022.**

**Journal of Occupational Rehabilitation, vol. 32, no. 1.**

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**Keywords:** Latent class growth analysis; mental health problems; return to work self-efficacy; sick leave; trajectories.

**Evidence Level:** 5A

**Link:** <https://link.springer.com/article/10.1007/s10926-021-09979-2>

## Presenteeism and Absenteeism

*This month explores the effect of working from home on presenteeism, and associations of absenteeism/presenteeism with a range of factors such as employment sector, depressive symptom severity, working conditions, alcohol use, presence of oral disease and independent medical evaluations.*

### Home-based telework and presenteeism: New lessons learned from the COVID-19 pandemic

**Background:** Previous research found increased sickness presenteeism (working despite sickness) associated with home-based telework. The COVID-19 pandemic offers new insights into mechanisms, as a large proportion of the workforce was forced to work from home, irrespective of organizational and individual predispositions. **Methods:** A path analysis based on survey data from a sample of teleworkers collected during the COVID-crisis was performed. **Results:** We found no general relationship between telework and sickness presenteeism. However, employees with telework experience before the pandemic use telework more often for work intensification which is associated with increased sickness presenteeism. As teleworking before the pandemic is associated with indirect work control (goal-directed management), indirect effects of such work organizations on presenteeism were confirmed. **Conclusion:** As hypothesized in prior research, indirect work control may increase self-endangering behavior which is amplified by telework.

**Gerich 2022.**

**Journal of Occupational and Environmental Medicine, vol. 64, no. 3.**

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**Keywords:** Telework; presenteeism; COVID-19; pandemic.

**Evidence Level:** 5A

**Link:** [https://journals.lww.com/joem/Fulltext/2022/03000/Home\\_Based\\_Telework\\_and\\_Presenteeism\\_New\\_Lessons.9.aspx](https://journals.lww.com/joem/Fulltext/2022/03000/Home_Based_Telework_and_Presenteeism_New_Lessons.9.aspx)

### Association between workplace absenteeism and alcohol use disorder from the national survey on drug use and health, 2015-2019

**Background:** Alcohol use disorder (AUD) is common and associated with increased morbidity. The degree to which AUD currently factors into workplace absenteeism needs further characterization in the US. **Objective:** To examine the association between AUD and workplace absenteeism in a nationally representative sample. **Methods:** This cross-sectional study used data from a nationally representative sample of noninstitutionalized US residents from the 2015-2019 National Survey on Drug Use and Health to examine the association of AUD with workplace absenteeism. Eligible respondents were aged 18 years and older who reported full-time employment. Data were analyzed from March to September 2021. Primary outcomes were markers of workplace absenteeism as defined by the number of days missed from work because of illness or injury and days skipped from work in the last 30 days. Descriptive statistics, prevalence ratios, and logistic regression analyses were performed to assess the association between AUD and absenteeism. **Results:** A total of 110 701 adults aged 18 years and older reported current full-time employment (58 948 [53.2%] men, 51 753 [46.8%] women; 12 776 [11.5%] Black, 18 096 [16.3%] Hispanic, and 69 506 [62.8%] White respondents). Weighted prevalence of AUD in this sample of working adults was 9.3% (95% CI, 9.0%-9.5%); 6.2% (95% CI, 6.0%-6.4%) of respondents met criteria for mild AUD, 1.9% (95% CI, 1.7%-2.0%) for moderate AUD, and 1.2% (95% CI, 1.1%-1.3%) for severe AUD. Mean days missed from work annually increased in a stepwise fashion with increasing AUD severity (no AUD, 13.0 days; 95% CI, 12.7-13.2 days; mild AUD, 17.7 days; 95% CI, 16.4-19.1 days; moderate AUD, 23.6 days; 95% CI, 21.5-25.7 days; severe AUD, 32.3 days; 95% CI, 27.5-37.0 days). People with AUD represented 9.3% of the full-time workforce and contributed to 14.1% of total reported workplace absences. **Discussion and Conclusions:** In this cross-sectional study, AUD was disproportionately associated with an increased prevalence of workplace absenteeism, with individuals with AUD contributing over 232 million missed workdays annually. These results provide economic incentive for increased investment in AUD prevention and treatment, both for employers and policy makers.

**Parsley et al. 2022.**



**JAMA Network Open, vol. 5, no. 3.**

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**Keywords:** Absenteeism; alcohol use; drug use; health.

**Evidence Level:** 4B

**Link:** <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2790205>

### **Cross-sectional associations between oral diseases and work productivity loss among regular employees in Japan**

**Background:** The association between oral diseases and work productivity loss remains unclear. This study examined whether dental caries, tooth loss, and poor periodontal status were associated with absenteeism and presenteeism. **Methods:** This cross-sectional study used two independent datasets: 184 employees at a medical university and 435 employees from among the registrants of an online research company. Absenteeism and presenteeism, according to the World Health Organization Health and Work Performance Questionnaire, were dependent variables. The independent variables were the number of decayed and filled teeth (DFT), missing teeth (MT), and self-reported periodontal status. Multivariable linear regression models were developed to estimate unstandardised coefficients with 95% confidence intervals (CIs) for absenteeism and presenteeism. **Results:** After adjusting for covariates, among the 435 employees enrolled from among the registrants of an online research company, poor periodontal status was significantly associated with a 7.8% (95%CI = -14.5, -1.0) decline in presenteeism but not absenteeism. DFT and MT were not significantly associated with either absenteeism or presenteeism in both populations. **Discussion and Conclusions:** Given that periodontal status was potentially associated with a 7.8% decline in work performance, occupational specialists, managers, and dental health professionals should be aware of the impact on work productivity.

**Sato et al. 2022.**

**Industrial Health, vol. 4.**

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**Keywords:** Absenteeism; oral health; presenteeism; work performance; work productivity.

**Evidence Level:** 4B

**Link:** [https://www.jstage.jst.go.jp/article/indhealth/advpub/0/advpub\\_2021-0274/\\_article](https://www.jstage.jst.go.jp/article/indhealth/advpub/0/advpub_2021-0274/_article)

### **Association between work attendance when experiencing fever or cold symptoms and company characteristics and socioeconomic status in the COVID-19 pandemic in Japanese workers: A cross-sectional study**

**Background:** This study investigated the association between attending work while experiencing fever or cold symptoms and workers' socioeconomic background and company characteristics during the COVID-19 pandemic. **Methods:** A cross-sectional online survey was performed. Of a total of 33,302 participants, 3676 workers who experienced fever or cold symptoms after April 2020 were included. The odds ratios (ORs) of attending work while sick associated with workers' socioeconomic background and company characteristics were evaluated using a multilevel logistic model. **Results:** The OR of attending work while sick associated with a lack of policy prohibiting workers from working when ill was 2.75 (95% CI: 2.28 to 3.20, P < 0.001). **Conclusion:** This study suggests that clear company policies on work and illness can be effective for preventing employees from attending work while sick.

**Mizuki et al. 2022.**

**Journal of Occupational and Environmental Medicine, vol. 64, no. 3.**

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**Keywords:** Work attendance; fever; cold symptoms; COVID-19; Japanese.

**Evidence Level:** 4B

**Link:** [https://journals.lww.com/joem/Fulltext/2022/03000/Association\\_Between\\_Work\\_Attendance\\_When.15.aspx](https://journals.lww.com/joem/Fulltext/2022/03000/Association_Between_Work_Attendance_When.15.aspx)

### **Physical working conditions and subsequent sickness absence: a record linkage follow-up study among 19-39-year-old municipal employees**

**Background:** Physical work exposures are associated with sickness absence among older employees. We aimed to examine if they similarly contribute to all-cause sickness absence during early and mid-careers.

**Methods:** We used questionnaire data on physical work exposures linked to register data on sickness absence from 3542 municipal employees aged 19-39 years. Follow-up for the number of sickness absence days was 12 months. Exposures to physical workload, occupational environmental hazards, and sedentary work were divided into quartiles. In addition, duration of daily exposure to heavy work was included.

Negative binomial regression models were used. **Results:** Higher exposure to physical workload or hazardous exposures was associated with a higher number of sickness absence days. The age and gender adjusted rate ratios for sickness absence days among the participants whose exposure to physical workload was in the highest exposure quartile were 2.1 (95% CI 1.8–2.5) compared with those whose exposure was in the lowest quartile. In addition, rate ratios for sickness absence days among participants who reported that they do heavy physical work 1.1–2.0 h, 2.1–4.0 h or over 4 h daily were 1.6 (1.3–1.9), 1.5 (1.3–1.8) and 1.7 (1.5–2.1), respectively, compared with those who reported not doing physical work. Further adjustment for lifestyle factors or health characteristics attenuated the associations only slightly. **Conclusion:** Exposure to physically demanding work is associated with a higher number of sickness absence days among municipal employees below 40 years of age. Physical working conditions should be considered when aiming to support later work ability.

**Mänty et al. 2022.**

**International Archives of Occupational and Environmental Health, vol. 95, no. 2.**

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**Keywords:** Cohort study; occupational exposures; public sector; sick leave; young employees.

**Evidence Level:** 4A

**Link:** <https://link.springer.com/article/10.1007/s00420-021-01791-y>

### **Sickness presenteeism in prison officers: Risk factors and implications for wellbeing and productivity**

**Background:** Sickness presenteeism involves employees continuing to work while unwell. As presenteeism is influenced by contextual and individual difference factors, it is important to assess its prevalence and implications for wellbeing and productivity in different occupational groups. This study examines these issues in a sample of prison officers working in UK institutions. **Methods:** Data were obtained from a survey of 1956 prison officers. Measures assessed the prevalence of and reasons for presenteeism and the perceived impact on job performance, along with mental health and perceptions of workplace safety climate. **Results:** More than nine respondents out of ten (92%) reported working while unwell at least sometimes, with 43% reporting that they always did so. Presenteeism frequency was significantly related to mental health symptoms, impaired job performance and a poorer workplace safety climate. The reasons provided for presenteeism explained 31% of the variance in self-reported mental health, 34% in job performance and 17% in workplace safety climate, but the pattern of predictors varied according to the outcome. **Discussion and Conclusion:** The findings can be used to inform interventions at the organisational and individual levels to encourage a 'healthier' approach to sickness absence, with likely benefits for staff wellbeing, job performance and workplace safety climate.

**Kinman et al. 2022.**

**International Journal of Environmental Research and Public Health, vol. 19, no. 6.**

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**Keywords:** Mental health; presenteeism; prison officers; safety climate.

**Evidence Level:** 5B

**Link:** <https://www.mdpi.com/1660-4601/19/6/3389>

### **What is the effect of independent medical evaluation on days on sickness benefits for long-term sick listed employees in Norway? A pragmatic randomised controlled trial, the NIME-trial**

**Background:** Independent medical evaluations are used to evaluate degree and reason for work disability, uncertainty around the functional status, and/or the employee's rehabilitation potential in several jurisdictions, but not in Norway. The main aim of this trial was to test the return to work effect of



independent medical evaluation (IME) (summoning and consultation) compared to treatment as usual (TAU) in Norway, for workers who have been on continuous sick leave for 6 months. **Methods:** This was a pragmatic randomised controlled trial including all employees aged 18-65 years, sick-listed by their general practitioner and on full or partial sick leave for the past 26 weeks in Hordaland County, Norway in 2015/16. Trial candidates were drawn from a central register at the Norwegian Labour and Welfare Administration at 22 weeks of sick leave. Pregnant women, individuals with cancer or dementia diagnoses, those with secret address, employed by NAV or sick listed by the specialist health services were excluded. Separate regression analyses were conducted to investigate the "intention-to-treat" and "treatment on the treated" effects, using the ordinary least squares and instrumental variable methods, respectively. **Results:** After exemption based on predefined exclusion criteria, 5888 individuals were randomised to either IME (n = 2616) or TAU (n = 2599). The final intervention group constitutes 1698 individuals, of which 937 attended the IME consultation. No baseline differences were found between the IME and TAU group regarding gender, age, and previous sick leave. Individuals attending the IME were older than those who cancelled the appointment ((47/45),  $p = 0.006$ ) and those who did not show up without cancelling ((47/42),  $p < 0.001$ ). Mainly the IME physician agreed with the regular GP upon level of sick leave. In cases with different assessments, the difference tended to be towards a lower sick leave level. There were no intention to treat or treatment on the treated effect on days of sick leave after randomisation during follow up.

**Conclusions:** Overall, the analyses showed no effect of IME on changes in sick leave for sick listed employees. This result was consistent for those who were offered an IME consultation (intention to treat) and those who undertook an IME consultation (treatment on the treated).

**Mæland et al. 2022.**

**BMC Public Health, vol. 22, no. 1.**

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**Keywords:** independent medical examination; injured workers; insurance medicine; return to work; sick leave.

**Evidence Level:** 2B

**Link:** <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-12800-1>

### **Associations of employment sector and occupational exposures with full and part-time sickness absence: random and fixed effects analyses on panel data**

**Background:** We aimed to investigate the influence of unobserved individual characteristics in explaining the effects 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. For pSA, the effects of employment sector and physical heaviness of work among women even reversed. The effect of lower job control on pSA remained especially among women. **Conclusions:** The role of individuals' unobserved characteristics in explaining the effects of work-related factors on SA should not be neglected. The effects of work-related factors are likely to be overestimated when using traditional approaches that do not account for unobserved confounding, ie, selection of individuals with a high likelihood of SA into particular work environments.

**Hartikainen et al. 2022.**

**Scandinavian Journal of Work, Environment and Health, vol. 48, no. 2.**

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**Keywords:** Employment; exposure; part-time; sickness absence.

**Evidence Level:** 4A

**Link:** <https://www.sjweh.fi/article/4003>

## **Absenteeism and associated labour costs according to depressive symptom severity in the German general population: why preventive strategies matter**

**Background:** Depression is a highly prevalent mental health condition with substantial individual, societal and economic consequences. This study focussed on the association of depressive symptom severity with absenteeism duration and employer labour costs. **Methods:** Using cross-sectional data from the German Health Update 2014/2015, multivariable zero-inflated Poisson regression (ZIP) models explored the association of depressive symptom severity (8-item depression patient health questionnaire-PHQ-8), with absenteeism weeks during 12 months in men and women working full- or part-time. The predicted sick leave weeks were multiplied by mean average labour costs. **Results:** The sample consisted of 12,405 persons with an average sick leave of 1.89 weeks (SD 4.26). Fifty-four % were women and 57% were between 40 and 59 years of age. In men and women, mild, moderate, moderately severe and severe depressive symptoms were associated with a significant factor increase in sick leave weeks compared to persons with no or minimal symptoms. Labour costs increased with increasing symptom severity from € 1468.22 for men with no or minimal depressive symptoms to € 7190.25 for men with severe depressive symptoms and from € 1045.82 to € 4306.30 in women, respectively. **Conclusion:** The present results indicate that increasing depressive symptom severity is associated with increasing absenteeism and employer costs. They emphasize the need for implementation, realignment or extension of professional work-site health promotion programmes aiming at the improvement and maintenance of employee health and the reduction of labour costs associated with depression-related sick leave.

**Eßl-Maurer et al. 2022.**

**International Archives of Occupational and Environmental Health, vol. 95, no. 4.**

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**Keywords:** Absenteeism; depression; labour costs; mental health; sick leave.

**Evidence Level:** 4B

**Link:** <https://link.springer.com/article/10.1007/s00420-021-01788-7>

## **Working Hours**

*This month explores the unpaid working hours during covid-19 and the effect of working hours on unmet medical needs.*

### **Understanding the unpaid work roles amongst households, during COVID-19**

**Background:** Worldwide, the COVID-19 pandemic has had a rapid disruption on work, social activities and family life. Pre-pandemic norms suggested that women spend more time in unpaid work roles and with childcare, while men spend more time in paid work roles. This study aims to understand: 1) the distribution of unpaid work roles within households, and 2) if there are certain factors that explain the unpaid work roles within a household during the pandemic. **Methods:** This study used a cross-sectional survey of people across the globe, during the pandemic. The survey, administered through a virtual platform of Qualtrics, consisted of the following sections: (a) consent, (b) location and job description (c) marital status and household numbers (d) age, sex, and gender (e) unpaid work roles and family responsibilities. Descriptive statistics and percentages were reported for all the data regarding the study variables. A multivariable regression model was used to understand which factors may explain the changes in unpaid work roles recalling before and during the pandemic. **Results:** This survey was completed by 1847 participants. The mean age was 30 years old (standard deviation of 13.3). The majority of participants identified themselves as women (76.0%) and single (62.1%). The multivariable linear regression indicated that marital status (single, common-law, married, divorced), higher number of household members (1-8,12), older age, higher number of dependent children, and gender (female) were positive and significant predictors of baseline changes in unpaid work role scores, explaining 50% of the variance ( $R^2 = 0.50$ ). **Discussion:** All households experienced a significant increase in the amount of unpaid work roles during the pandemic. However, older women who were in a relationship and experienced additional household members such as dependent children or sick older adults, were faced with more changes in unpaid work roles during COVID-19, than other individuals.

**Furtado et al. 2022.**

**Aging and Health Research, vol. 2, no. 2.**

**User License:** Elsevier Connect COVID-19 resource centre

**Keywords:** Unpaid work; COVID-19; households; pandemic.

**Evidence Level:** 4A

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8931991/>

### **Differential impact of working hours on unmet medical needs by income level: a longitudinal study of Korean workers**

**Background:** Unmet medical need is defined as the perceived need for medical service that is not received. Although the association between unmet medical needs and working hours has been explored before, the combined effect of household income has not been investigated thus far. This study, therefore, aimed to examine the differential association between working hours and the risk of unmet medical needs according to household income. **Methods:** A total of 7047 participants enrolled in the Korea Health Panel data 2011-2014 were considered. The analytical method used in this study was a generalized estimating equation model that accounted for repeated measured participants. By controlling for time-invariant individual-fixed effects, we identified the relationship between long working hours and the risk of unmet medical needs.

**Results:** The association between long working hours and the risk of unmet medical needs differed according to household income. In the highest quintile of household income, the risk of unmet medical needs was 1.58-fold higher among those who worked >52 hours per week than among those who worked 30-52 hours per week. However, this association was not significant in the lowest quintile group.

**Conclusions:** The current study implies that financial hardship might be a more fundamental health hazard than working longer hours among the low-income group. Future policies should consider not only limiting working hours but also compensating workers' income to adequately protect low-income workers from the health risks associated with long working hours.

**Lee et al. 2022.**

**Scandinavian Journal of Work, Environment and Health, vol. 48, no. 2.**

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**Keywords:** Working hours; unmet medical need; income level; Korea.

**Evidence Level:** 4B

**Link:** <https://www.sjweh.fi/article/3999>

## **Building Employer Capability**

### **Wellness Programs**

*A range of wellness programs are explored this month, from oral health promotion, weight loss programs and general health and wellbeing.*

### **Association between participation in the short version of a workplace oral health promotion program and medical and dental care expenditures in Japanese workers: A longitudinal study**

**Background:** Studies suggest that intensive oral health promotion programs in the workplace reduce dental and medical care expenditures. The purpose of this longitudinal study was to evaluate the short version of an oral health promotion program in the workplace from the viewpoint of dental and medical care expenditures. **Methods:** Data for annual expenditures and number of days of dental, periodontal, and medical treatment in fiscal year 2018 and participation in the short version of a workplace oral health promotion program of 2545 workers (20-68 years old) in a company in fiscal year 2017 and prior were obtained. Zero-inflated negative binomial regression models or negative binomial regression models were used to evaluate the association between participation in the program and expenditures or number of days of treatment after adjusting for sex and age. **Discussion:** Program participants were more likely than non-participants to visit dentists for dental and periodontal treatment. Those who participated twice or more spent less on dental, periodontal, and medical treatment and had fewer visits to dentists than non-

participants. **Conclusions:** These results suggest that the short version of an oral health promotion program in the workplace decreases expenditures for dental, periodontal, and medical treatment.

**Mochida et al. 2022.**

**International Journal of Environmental Research and Public Health, vol. 19, no. 5.**

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**Keywords:** Dental care expenditure; medical care expenditure; number of days of dental treatment; number of days of medical treatment; oral health promotion program.

**Evidence Level:** 4B

**Link:** <https://www.mdpi.com/1660-4601/19/5/3143>

### **Barriers and facilitative factors in the implementation of workplace health promotion activities in small and medium-sized enterprises: a qualitative study**

**Background:** There is an immense difference between large companies and small and medium-sized enterprises (SMEs) in implementation of evidence-based interventions (EBIs). Previous literature reveals various barriers that SMEs face during implementation, such as a lack of time, accessibility, and resources. However, few studies have comprehensively examined those influential factors at multi-levels. This study aims to identify the factors influencing the implementation of non-communicable disease prevention activities (tobacco, alcohol, diet, physical activity, and health check-up) in SMEs using Consolidated Framework for Implementation Research (CFIR). **Methods:** We conducted 15 semi-structured interviews with health managers and/or employers in 15 enterprises with less than 300 employees, and four focus groups among public health nurses/nutritionists of health insurers who support SMEs in four prefectures across Japan. A qualitative content analysis by a deductive directed approach was performed. After coding the interview transcript text into the CFIR framework constructs by two independent researchers, the coding results were compared and revised in each enterprise until an agreement was reached. **Results:** Of the 39 CFIR constructs, 25 were facilitative and 7 were inhibitory for workplace health promotion implementation in SMEs, which were across individual, internal, and external levels. In particular, the leadership engagement of employers in implementing the workplace health promotion activities was identified as a fundamental factor which may influence other facilitators, including "access to knowledge and information," "relative priority," "learning climate," at organizational level, and "self-efficacy" at the health manager level. The main barrier was the beliefs held by the employer/manager that "health management is one's own responsibility." **Conclusions:** Multi-level factors influencing the implementation of non-communicable diseases prevention activities in SMEs were identified. In resource-poor settings, strong endorsement and support, and positive feedback from employers would be important for health managers and employees to be highly motivated and promote or participate in health promotion. Future studies are needed to develop context-specific strategies based on identified barriers and facilitative factors, and empirically evaluate them, which would contribute to narrowing the differences in worksite health promotion implementation by company size.

**Saito et al. 2022.**

**Implementation Science Communications, vol. 3, no. 1.**

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**Keywords:** Barriers; employer; facilitative factors; health manager; implementation; non-communicable diseases; small and medium-sized enterprises; workplace health promotion.

**Evidence Level:** 5B

**Link:** <https://implementationsciencecomms.biomedcentral.com/articles/10.1186/s43058-022-00268-4>

### **Virtual reality as a tool to promote wellbeing in the workplace**

**Background:** NHS staff are disproportionately impacted by workplace stress, threatening not only quality of service delivery, but the sustainability, of this vital healthcare system. There is an urgent need for accessible and cost-effective interventions that promote the wellbeing of this integral workforce. **Aim:** The aim of this study was to explore the potential propensity of a short virtual reality (VR) nature experience, delivered during the workday, to induce positive mood states NHS clinicians. **Method:** NHS clinicians working in a fast-paced trauma service were offered the opportunity to take part in a short virtual reality (VR) relaxation session, during their working day, in which they were able to explore the "Green Meadows"

experience available within the Nature Treks application. An indication of physiological arousal (heart rate) was obtained, and subjective measures of emotional state were employed to assess the effect of the intervention on participants' mood. Further, feedback was gathered to provide an initial indication of the acceptability of the experience. **Results:** Analysis of data from 39 clinicians revealed that, following the VR experience, participants reported significantly increased feelings of happiness ( $p < 0.001$ ) and relaxation ( $p < 0.001$ ), and significantly decreased feelings of sadness ( $p = 0.003$ ), anger ( $p < 0.001$ ) and anxiety ( $p < 0.001$ ). No significant differences in reported levels of surprise ( $p = 0.603$ ) or vigour ( $p = 0.566$ ) were found. Further, the experience was associated with a significant reduction in heart-rate ( $p = 0.025$ ), and had high acceptability ratings, despite participants' varied experience with computers and VR technology. **Conclusions:** The findings of this study indicate that the administration of VR for the promotion of NHS staff wellbeing in the workplace is a potentially fruitful avenue of exploration that warrants further investigation.

**Adhyaru et al. 2022.**

**Digital Health, vol. 4.**

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**Keywords:** NHS; Virtual reality; relaxation; self-care; wellbeing; work-related stress; workplace.

**Evidence Level:** 5A

**Link:** <https://journals.sagepub.com/doi/full/10.1177/20552076221084473>

#### **Effects of a worksite-based self-management program in traditional retail market workers: Longitudinal associations with metabolic parameters**

**Background:** This study explored the effects of a worksite-based self-management program on metabolic parameters in traditional retail market workers during a 3-year period. **Methods:** Seventy traditional retail market workers who completed 3 years of follow-up were included in this study. The worksite-based self-management program was developed to help traditional retail market workers manage metabolic parameters themselves based on the following content: (I) using a metabolic syndrome action checklist, (II) counseling, (III) creating improvement action plans, and (IV) evaluating implemented improvements.

**Results:** The rates of implemented improvements showed success. Fasting blood sugar and triglycerides showed yearly reductions from baseline for 3 years, which eventually led to a decreased metabolic syndrome score and maintenance of metabolic parameters in the normal range for 3 years. **Conclusions:** A worksite-based self-management program on metabolic parameters in traditional retail market workers was effective. It improved their intention to self-assess and cope their health problems and eventually decreased their metabolic syndrome score. It should be considered for the primary prevention of metabolic syndrome among traditional retail market workers.

**Kim et al. 2022.**

**International Journal of Environmental Research and Public Health, vol. 19, no. 5.**

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**Keywords:** Checklist; community-based participatory research; metabolic syndrome; self-management; small business.

**Evidence Level:** 5A

**Link:** <https://www.mdpi.com/1660-4601/19/5/2854>

#### **Association between weight loss, change in physical activity, and change in quality of life following a corporately sponsored, online weight loss program**

**Background:** The physiological benefits associated with corporately sponsored weight loss programs are increasingly well documented. However, less is known about how these programs affect employees' quality of life (QoL). The purpose of the present analysis was to examine the association between weight loss, change in physical activity, and change in QoL following a corporately sponsored, online weight loss program. **Methods:** We examined the relationship between weight loss, self-reported change in physical activity, and change in several QoL indices in 26,658 participants (79% women) after the initial 10 weeks of the online weight loss program. The trend in changes in each QoL index with increasing weight loss and change in physical activity was examined using logistic regression analysis. **Results:** We observed greater improvements in each QoL index with increasing weight loss ( $p$ -for-trend,  $< 0.001$ ) as well as with



progressive increases in physical activity (p-for-trend, < 0.001). The combination of increasing weight loss and increases in physical activity were associated with the greatest improvements in each QoL index (additive effect). The percentage of employees reporting improvements in QoL ("improved" or "very much improved") was 64% for energy, 63% for mood, 33% for sleep, 65% for self-confidence, 68% for indigestion, and 39% for musculoskeletal pain. **Conclusions:** Among people, who engage with a commercial weight loss program, greater weight loss during the program was associated with greater improvements in QoL, and increases in physical activity further enhanced the QoL-related benefits.

**Höchsmann et al. 2022.**

**BMC Public Health, vol. 22, no. 1.**

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**Keywords:** Corporate health; online; physical activity; quality of life; web-based; weight loss program.

**Evidence Level:** 4A

**Link:** <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-12835-4>

## Organisational Issues

*This month, studies explore the role of perceived organisational justice on job stress and organisational support on the experience of pain amongst employees.*

### **Examining the relationship between COVID-19 related job stress and employees' turnover intention with the moderating role of perceived organizational support: evidence from SMEs in China**

**Background:** The outbreak of COVID-19 has exerted an enormous impact on society, enterprises, and individuals. It has affected the work attitudes and psychology of employees to a certain extent and their job stress (JS) has also augmented accordingly, leading to increased turnover intention (TI). **Methods:** With the survey responses of 720 employees of small and medium enterprises (SMEs) in China as the sample, we studied the impact of COVID-19 related JS and TI with the moderating effect of perceived organizational support (POS). We utilized linear and multiple regression analysis using Windows SPSS 25. **Results:** The research findings indicated that the JS caused by COVID-19 in the first affected region (Hubei) was significantly stronger than that in other regions (non-Hubei). JS had a significant positive relationship with employees' TI, while POS had a significant negative connection with employees' TI. We also identified that POS weakened the positive association between JS and employees' TI. **Discussion and Conclusion:** These findings are expected to be conducive to and conducive for the upcoming theoretical and empirical investigations as the founding guidelines, as well as for managers in formulating effective policies to curb JS, which would ultimately be helpful in reducing TI.

**Lai et al. 2022.**

**International Journal of Environmental Research and Public Health, vol. 19, no. 6.**

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**Keywords:** COVID-19; employee psychology; job stress; perceived organizational support; small and medium enterprises; turnover intention.

**Evidence Level:** 5B

**Link:** <https://www.mdpi.com/1660-4601/19/6/3719>

### **The role of perceived organisational justice in the experience of pain among male and female employees**

**Background:** This study examined the association of organisational justice with pain among employees of a large organisation. **Methods:** Employees (n = 1829) completed measures of pain, fair pay, organisational justice, job satisfaction and stress. **Results:** Logistic regression analyses found that organisational justice was unrelated to pain among women, but men with higher perceptions of fair pay were more likely to report chronic pain as were men with lower perceptions of distributive justice. **Discussion and Conclusion:** This is the first study indicating that fair pay and distributive justice are both unique predictors of chronic pain in men. The findings have implications for supporting employees with chronic pain.

**McParland et al. 2022.**

**Journal of Health Psychology, vol. 27, no. 4.**



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**Keywords:** Chronic pain; employees; organisational justice; sex differences; workplace

**Evidence Level:** 5A

**Link:** <https://journals.sagepub.com/doi/pdf/10.1177/1359105320967423>

## Job Design

*This month, studies explore the challenges of working from home and the effect of flexible and irregular working hours on health behaviours.*

### **Working at home and expectations of being available: effects on perceived work environment, turnover intentions, and health**

**Background:** The aim of this study was to determine if (i) working at home and (ii) expectations of being available to the employer in their spare time influences employees' perceptions of their work environment and well-being, health, organizational commitment, or intention to leave. **Methods:** We conducted cross-sectional analyses of survey data from 7861 office workers reporting hours worked at home and 3146 reporting frequency of expectations of being available to the employer in spare time (availability expectations). Prospective analyses (two-year follow up) comprised 5258 and 2082, respectively. Dependent variables were work factors previously associated with health complaints, mental distress, positive affect, work-private life conflict, commitment, and intention to leave. Random intercept linear and logistic regressions controlled for time worked (in addition to regular hours), age, gender, and skill level. **Results:** "Hours working at home" was cross-sectionally associated with higher levels of demands, role ambiguity, role conflicts, decision control, empowering leadership, human resource primacy, commitment, work-private life conflict, and lower support from co-workers. "Availability expectations" was associated with higher levels of demands, role conflicts, neck pain, mental distress, thinking that work was not finished when going to bed, sleep problems, work-private life conflict, intentions to leave and with lower levels of superior support, co-worker support, fair leadership, and commitment. There were no prospective associations. **Conclusions:** Working at home was associated with both positive and negative factors. Specific factors pertaining to role expectations and support from co-workers pose challenges. Availability expectations was associated with potentially negative work factors and health, organizational commitment, and intentions to leave. There were no long-term effects.

**Knardahl et al. 2022.**

**Scandinavian Journal of Work, Environment and Health, vol. 48, no. 2.**

**User License:** Creative Commons Attribution (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/>)

**Keywords:** Work environment; expectations; working from home; wellbeing.

**Evidence Level:** 4A

**Link:** <https://www.sjweh.fi/article/3996>

### **The effect of change of working schedule on health behaviors: evidence from the Korea labor and income panel study (2005-2019)**

**Background:** This study investigated whether changes in work schedule are associated with health behavior changes. **Methods:** We used data from the Korea Labor and Income Panel Survey from 2005 to 2019. A generalized estimating equation model was used to assess the association between changes of work schedules (day-day, day-shift, shift-day, and shift-shift) and health behaviors. Odds ratios (ORs) with 95% confidence intervals (CIs) were calculated after adjusting for general and socioeconomic characteristics. **Results:** Fixed daytime work was observed for 25,716 person-years, and fixed shift work was observed for 2370 person-years out of the total 4046 participants during a 14 year period. Workers who changed their work schedule from fixed daytime to shift work and from shift to fixed daytime work contributed to 670 and 739 person-years, respectively. Considering continuous fixed daytime workers as a reference group, continuous exposure to shift work (aOR 1.11, CI 1.01-1.26) and changes from fixed daytime to shift work (aOR 1.18, CI 1.05-1.44) were significantly associated with an increased risk of changing either smoking or drinking behavior to unhealthy patterns. **Discussion and Conclusion:** The results of our study suggest that

workers who work irregular shift times, in contrast to those with more standard, regular work schedules, are at a higher risk of changing smoking and/or drinking behavior to unhealthy patterns.

**Jung et al. 2022.**

**Journal of Clinical Medicine**, vol. 11, no. 6.

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**Keywords:** Alcohol drinking; health behavior; occupation; shift work; smoking; work schedule.

**Evidence Level:** 5B

**Link:** <https://www.mdpi.com/2077-0383/11/6/1725>

### **Work from home challenges of the pandemic era in Hong Kong: A stimulus-organism-response perspective**

**Background:** Hong Kong is an international city where almost all the companies did not have a WFH policy before the pandemic since it is a very small place. During the pandemic period, Hong Kong governments, major banks and large private organizations have adopted WFH policy. The purpose of this article is to examine impact of work from home (WFH) practice on work engagement with the company during the pandemic period in Hong Kong. **Methods:** According to a stimulus-organism-response model, this study explores the dark side the WFH arrangement during the pandemic period. Convenience sampling method was used to collect 206 valid responses from individuals who were working from home in Hong Kong. Partial least squares structural equation modelling (PLS-SEM) was used in the analysis of data. **Results:** It was found that teamwork climate is negatively associated with physical isolation and sense of belonging is negatively associated with psychological isolation. Work engagement was impaired. **Discussion and Conclusion:** Affective social presence may not be so easily established through virtual ways. Virtual informal gatherings, such as virtual breakfasts, lunch or tea breaks where work-related matters are not discussed, could be arranged.

**Wut et al. 2022.**

**International Journal of Environmental Research and Public Health**, vol. 19, no. 6.

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**Keywords:** COVID-19; physical isolation; psychological isolation; sense of belonging; stimulus-organism-response model; teamwork climate; work engagement; work from home.

**Evidence Level:** 5B

**Link:** <https://www.mdpi.com/1660-4601/19/6/3420>

## **Shift Work**

*This month, studies explore the effect of shift work on fatigue and the effect of noise-masking earbuds on reported sleep quality.*

### **Working conditions and fatigue in Japanese shift work nurses: A cross-sectional survey**

**Background:** This study aimed to identify working conditions (working hours, overtime work, number of night shifts, number of holidays, and work intervals) associated with fatigue, based on the shift patterns, and to determine their thresholds. **Methods:** From January to February 2020, a web-based questionnaire was sent to 4,601 shift work nurses at 47 hospitals in Japan. Multivariate logistic analysis was conducted to predict high- and low-fatigue groups by working conditions, and receiver operating characteristic analysis was performed to clarify the high-fatigue thresholds by shift pattern. **Results:** A total of 386 shift work nurses participated in this study. The threshold (fatigue was 3.0 or higher) of the two-shift rotation was 9 hours 50 minutes for daily working hours during day shifts (Odds ratio [OR] = 1.57,  $p < .01$ ), 17 hours 15 minutes for daily working hours during night shifts (OR = 1.20,  $p < .01$ ), and 8.0 days for the number of night shifts (OR = 1.09,  $p = .02$ ). The threshold of the three-shift rotation was 9 hours 45 minutes (OR = 1.59,  $p < .01$ ), 2.9 days for the number of midnight shifts (OR = 1.53,  $p < .01$ ), and 2.0 times for the interval between day-shift and night-shifts within 12 hours (OR = 1.39,  $p < .01$ ). **Conclusion:** Working hours and the number of night shifts are important for two-shift rotations, and working hours for and assignment of

midnight shift are important for three-shift rotations. Nurse managers should manage shifts according to nurses' shift patterns.

**Kida et al. 2022.**

**Asian Nursing Research, vol. 15.**

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**Keywords:** Fatigue; nurse; occupational stress; shift work schedule; workload.

**Evidence Level:** 4B

**Link:** [https://linkinghub.elsevier.com/retrieve/pii/S1976-1317\(22\)00013-5](https://linkinghub.elsevier.com/retrieve/pii/S1976-1317(22)00013-5)

### **The effect of noise-masking earbuds (SleepBuds) on reported sleep quality and tension in health care shift workers: prospective single-subject design study**

**Background:** Shift work is associated with sleep disorders, which impair alertness and increase risk of chronic physical and mental health disease. In health care workers, shift work and its associated sleep loss decrease provider wellness and can compromise patient care. Pharmacological sleep aids or substances such as alcohol are often used to improve sleep with variable effects on health and well-being.

**Objective:** We tested whether use of noise-masking earbuds can improve reported sleep quality, sleepiness, and stress level in health care shift workers, and increase alertness and reaction time post night shift. **Methods:** Emergency medicine resident physicians were recruited for a prospective, single-subject design study. Entrance surveys on current sleep habits were completed. For 14 days, participants completed daily surveys reporting sleep aid use and self-rated perceived sleepiness, tension level, and last nights' sleep quality using an 8-point Likert scale. After overnight shifts, 3-minute psychomotor vigilance tests (PVT) measuring reaction time were completed. At the end of 14 days, participants were provided noise-masking earbuds, which they used in addition to their baseline sleep regimens as they were needed for sleep for the remainder of the study period. Daily sleep surveys, post-overnight shift PVT, and earbud use data were collected for an additional 14 days. A linear mixed effects regression model was used to assess changes in the pre- and postintervention outcomes with participants serving as their own controls.

**Results:** In total, 36 residents were recruited, of whom 26 participants who completed daily sleep surveys and used earbuds at least once during the study period were included in the final analysis. The median number of days of earbud use was 5 (IQR 2-9) days of the available 14 days. On days when residents reported earbud use, previous nights' sleep quality increased by 0.5 points ( $P<.001$ , 95% CI 0.23-0.80), daily sleepiness decreased by 0.6 points ( $P<.001$ , 95% CI -0.90 to -0.34), and total daily tension decreased by 0.6 points ( $P<.001$ , 95% CI -0.81 to -0.32). These effects were more pronounced in participants who reported worse-than-average preintervention sleep scores. **Conclusions:** Nonpharmacological noise-masking interventions such as earbuds may improve daily sleepiness, tension, and perceived sleep quality in health care shift workers. Larger-scale studies are needed to determine this interventions' effect on other populations of shift workers' post-night shift alertness, users' long-term physical and mental health, and patient outcomes.

**Duggan et al. 2022.**

**JMIR Formative Research, vol. 6, no. 3.**

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**Keywords:** SleepBuds; alertness; earbud; health care; healthcare worker; physician; shift work; sleep; sleep aid.

**Evidence Level:** 5A

**Link:** <https://formative.jmir.org/2022/3/e28353/>

## Management and Leadership

*This month, the role of management/leadership on workers health, wellbeing and safety is explored in the construction, banking and health care sector.*

### **The mediating effects of work characteristics on the relationship between transformational leadership and employee well-being: A meta-analytic investigation**

**Background:** Evidence points to an indirect relationship between transformational leadership (TFL) and employee well-being, and numerous work characteristics have been identified as mediators. However, the relative mediating effect of different types of job resources and job demands on the TFL-well-being relationship remains unclear, rendering it impossible to determine which ones are the most influential.

**Methods:** This study aims to provide a comprehensive analysis of the relative mediation potential of different work characteristics in the TFL-well-being relationship in multiple three-level meta-analytical structural equation models of 243 samples. **Results:** Based on the JD-R Model, this study extends this theoretical framework by suggesting TFL as a predisposing variable that influences both job resources and job demands, leading to changes in indicators of both positive and negative employee well-being.

**Discussion:** The results show that, while all the examined job resources and demands mediated the TFL-well-being relationship, organizational resources were identified as the strongest mediators. Furthermore, job demands had a strong mediating effect on the relationship between TFL and negative well-being, while job resources more strongly mediated TFL and positive well-being. **Conclusion:** We present a differentiated picture of how transformational leaders can influence their employees' well-being at the workplace, providing valuable knowledge for future research and practice.

**Teetzel et al. 2022.**

**International Journal of Environmental Research and Public Health**, vol. 19, no. 6.

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**Keywords:** Employee well-being; job demands; job resources; meta-analysis; transformational leadership; work characteristics.

**Evidence Level:** 6B

**Link:** <https://www.mdpi.com/1660-4601/19/5/3133>

### **Voice endorsement and employee safety voice behavior in construction projects: The mediating role of leader-member exchange**

**Background:** Employee safety voice refers to publishing opinions and suggestions related to workplace safety issues. In recent years, it has gradually become a hot topic in the field of organizational safety management research. Voice endorsement is the leader's positive feedback to employees, and it is a necessary condition and key link for employees to achieve the purpose of voicing. Although there are many types of research on employee safety voice behavior and voice endorsement, few studies have explored the relationship between the two. **Methods:** Therefore, through a paired questionnaire survey of 214 leaders and 344 employees in construction projects, drawing on social exchange theory, using leader-member exchange (LMX) as a mediating variable, we discuss the mechanism of voice endorsement on employee safety voice behavior. **Results:** The results show that in construction projects, voice endorsement negatively affects employee safety voice behavior and LMX, and LMX positively affects employee safety voice behavior. **Discussion and Conclusion:** LMX has a mediating role in the relationship between voice endorsement and employee safety voice behavior. The results of this study can provide useful guidance for improving employee safety voice behavior management.

**Sun et al. 2022.**

**International Journal of Environmental Research and Public Health**, vol. 19, no. 6.

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**Keywords:** Construction projects; employee safety voice behavior; leader-member exchange; voice endorsement.

**Evidence Level:** 5A

**Link:** <https://www.mdpi.com/1660-4601/19/6/3374>

**The impact of ethical leadership, commitment and healthy/safe workplace practices toward employee attitude to COVID-19 vaccination/implantation in the banking sector in Lebanon**

**Background:** This study investigates the effect of ethical leadership, commitment and healthy/safe workplace practices toward employee COVID-19 vaccination. In addition, this study examines the perception of employees from technological intrusive vaccination of chips or quantum dot. **Methods:** In our research, we adopted the social exchange theory as its theoretical framework. Moreover, an online questionnaire was distributed to employees working in the banking sector in Lebanon during the COVID-19 pandemic. In total, 244 bankers completed the survey. Data was analyzed by SPSS statistical software version 26 and SmartPLS to test the relationship between the variables. **Results:** The results generated showed a positive relationship between ethical leadership, commitment, and safety influencing employees to accept vaccination but not necessarily technological intrusive vaccination (chip or quantum dot). **Discussion and Conclusion:** We suggest that organizations should influence leaders to enhance proper behaviors and attitudes to create a healthy, safe, and ethical culture that consequently increases employees' commitment. Finally, this study recommends future researchers to investigate the topic of COVID-19 vaccination and test other employees' perception from different industries and countries.

**Kabbani et al. 2022.**

**Vaccines (Basel), vol. 10, no. 3.**

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**Keywords:** COVID-19 vaccination; commitment; ethical leadership; healthy/safe workplace; on-patient vaccine records; quantum dot technology.

**Evidence Level:** 5B

**Link:** <https://www.mdpi.com/2076-393X/10/3/416>

**Abusive leadership, psychological well-being, and intention to quit during the COVID-19 pandemic: a moderated mediation analysis among Quebec's healthcare system workers**

**Background:** To examine the effects from work-organization conditions, abusive leadership, and their interaction on Quebec healthcare system workers' psychological well-being and intention to quit during the COVID-19 pandemic. **Methods:** Mediation and moderated mediation analyses were performed using MPlus software on a sample of 921 Quebec healthcare system workers. **Results:** Skill utilization, decision authority, social support from co-workers and supervisors, and recognition were associated directly and positively with psychological well-being, while psychological and physical demands were associated directly and negatively with psychological well-being. Skill utilization, irregular work schedule, and recognition were associated directly and negatively with intention to quit, while psychological demands were associated directly and positively with intention to quit. Moreover, the results demonstrated that abusive leadership attenuated the effects from recognition and decision authority on psychological well-being (moderation effects), contributing to greater intention to quit among workers (moderated mediation effects).

**Conclusions:** The obtained results underline the importance of work-organization conditions and leadership style on healthcare system workers' psychological health and their intention to quit their jobs during a pandemic. In particular, and given their key role, leaders/managers must be sensitized concerning leadership style and its possible effects on their employees' psychological well-being and intention to quit. Therefore, training programs should be offered to leaders/managers to prevent adoption of abusive leadership styles.

**Simard et al. 2022.**

**International Archives of Occupational and Environmental Health, vol. 95, no. 2.**

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**Keywords:** Abusive leadership; COVID-19 pandemic; intention to quit; psychological well-being; work-organization conditions.

**Evidence Level:** 5B

**Link:** <https://link.springer.com/article/10.1007/s00420-021-01790-z>



### **Safety and health management response to COVID-19 in the construction industry: A perspective of fieldworkers**

**Background:** The COVID-19 outbreak has significantly impacted the construction industry. The pandemic can exacerbate an already dire safety and health situation in the industry and negatively impact construction employees and employers. The present study investigates the safety and health measures implemented by construction firms in the United States (US), their effectiveness and usefulness, and workers' satisfaction with these COVID-19 measures. **Methods:** A questionnaire survey was developed and distributed to construction fieldworkers in the US to collect their perspectives on the implemented COVID-19 measures in the construction industry. **Results:** A total of 187 valid responses were received and analyzed to achieve the aim of the study. Results revealed that strategies implemented to increase social distance and minimize group gathering to 10 persons in certain workstations were perceived to be substantially more effective than job-site screening strategies. Furthermore, smaller contractors implemented fewer safety measures and perceived them to be significantly less effective than those used by medium- and large-sized contractors. Fieldworkers were favorably disposed toward using technologies, such as video-conferencing apps and wearable sensing devices, to slow the spread of COVID-19 on construction job sites. **Discussion and Conclusion:** The present study contributes to the body of knowledge by identifying safety and health measures to mitigate the spread of COVID-19 in construction. Practically, the study findings provide valuable insights to inform the successful implementation of safety strategies in the construction industry during a pandemic. The results are crucial for industry practitioners responsible for developing and revising pre- and post-pandemic safety and health plans.

**Nnaji et al. 2022.**

**Process Safety and Environmental Protection, vol. 159.**

**User License:** Elsevier Connect COVID-19 resource centre

**Keywords:** COVID-19; construction management; coronavirus; pandemic; safety and health; strategies; technologies.

**Evidence Level:** 5B

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8766253/>

### **High-performance work practices and employee wellbeing-does health-oriented leadership make a difference?**

**Background:** This paper sheds further light on the contextual boundaries in the relationship between high-performance work practices (HPWPs) and employee wellbeing. In particular, we analyze whether this relationship is moderated by health-oriented leadership behavior (i.e., staff care) which describes the extent to which leaders value, are aware of, and protect their followers' health at work. **Methods:** Our analyses are based on employee data (N = 1,345) from Germany, covering two points in time. **Results:** Findings show positive associations between HPWPs and happiness-related (i.e., engagement, commitment) and health-related (i.e., general health, physical health complaints, mental health complaints, strain) wellbeing outcomes. **Discussion and Conclusion:** The positive relationship between HPWPs and employee wellbeing is weaker the more employees experience leadership behavior in terms of staff care. Thus, our results provide further evidence for a substitutive or compensatory effect between HRM and leadership.

**Hauff et al. 2022.**

**Frontiers in Psychology, vol. 3.**

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**Keywords:** Commitment; employee wellbeing (EWB); engagement; health; health-oriented leadership; high-performance work practices (HPWPs); staff care.

**Evidence Level:** 5B

**Link:** <https://www.frontiersin.org/articles/10.3389/fpsyg.2022.833028/full>



## Work Ability

*This month, studies explore the relationship of work ability with psychosocial factors, such as work stressors, with workers with disabilities, including back pain and with work designs such as working from home or mobile work.*

### **Are work demand, support and control associated with work ability and disability during back pain treatment? A prospective explorative study**

**Background:** Low back pain is a multifactorial disease with consequences for work ability and social participation. Improved integration of the work domain in health care management is needed. The aim of this study was to explore the relation between working conditions with outcome of low back pain treatment. **Methods:** Observational study of 41 patients attending physiotherapy for low back pain. Work demands, support and control were registered at baseline and work ability and disability also at baseline, with follow up after three and nine months. We used mixed-effects models to estimate the longitudinal associations between working conditions and outcome. **Results:** Higher work demands were related to reduced work ability (-1.1 points, 95% CI: -2.1 to -0.1) and slightly increased disability (5.6 points, 95% CI: 0.5 to 10.7). Lack of social support from colleagues was associated with reduced work ability (-2.7 points, 95% CI: -0.2 to 1.5) and disability (14.0 points, 95% CI: 4.9 to 23.1). **Conclusions:** This explorative study found associations between work demands and support, and work ability and disability outcome. Screening for psychosocial working conditions may influence the work ability and disability treatment outcome. The results need replication in larger samples and may indicate that patients seeking primary care management for low back pain should be screened for work demands, support and control.

**Unsgaard-Tøndel et al. 2022.**

**International Journal of Environmental Research and Public Health, vol. 19, no. 6.**

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**Keywords:** Disability evaluation; low back pain; primary health care; work characteristics.

**Evidence Level:** 4A

**Link:** <https://www.mdpi.com/1660-4601/19/6/3154>

### **Association between work ability and work stressors: cross-sectional survey of elderly services and health and social care service employees**

**Background:** Work in the health and social care services (HSS) is very stressful and sickness absences are high. Nevertheless, little is known about their work stressors and work ability. The first aim of this study is to describe the prevalence of different work stressors and their accumulation among eldercare workers compared to general HSS workers. Second aim is to analyze associations between different work stressors and work ability and thus provide information on factors that are important in enhancing work ability.

**Methods:** This cross-sectional survey examined HSS employees in Finland in 2020. The response rate was 67% (N = 22,502). Descriptive analyses were used to describe the control variables and the differences between the work stressors of general HSS and eldercare employees. After this, multinomial logistic regression analysis revealed the association between work stressors and work ability. **Results:** Eldercare employees experienced more often moral distress than HSS employees in general, and this further lowers their work ability. Single work stressors--Karasek's strain, Siegrist's ERI, organizational injustice and moral distress--increased the odds of low work ability (OR range 1.4-2.5) in comparison to no work stressors. However, the association with single stressors was roughly one third of that with the accumulation of all four work stressors (OR = 6.8). Thus, the accumulation of several stressors was most harmful for work ability. **Conclusions:** This study provides novel information on the accumulation of work stressors in relation to work ability. The results suggest that in order to enhance work ability, HSS organizations should pay more attention to preventing several stressors from accumulating. Eldercare organizations in particular need to develop effective measures for lowering moral distress.

**Selander et al. 2022.**

**Archives of Public Health, vol. 80, no. 1.**

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**Keywords:** Health and social care (HSS) employees; moral distress; work ability; work stressor.

**Evidence Level:** 4B

**Link:** <https://archpublichealth.biomedcentral.com/articles/10.1186/s13690-022-00841-2>

### **Study on residential environment and workers' personality traits on productivity while working from home**

**Background:** Working from home has drawn more attention with the development of information and communications technology and the coronavirus disease 2019 pandemic. Although studies on working from home have been conducted in various academic fields, few have focused on residential environment and personality traits. **Methods:** In the present study, air temperature and humidity of the home workplace were measured and a questionnaire survey was conducted to understand the relationship between residential environment and personality traits and at-home work productivity. **Results:** The results suggest that comprehensive productivity while working from home improved. However, when examining individual aspects of productivity, the productivity of information processing improved while that of knowledge processing and knowledge creation deteriorated. **Discussion:** The results also suggest the importance of improving the residential environment when working from home because productivity while working from home rather than from the office improved with high evaluation of the residential environment. Moreover, productivity decreased for workers with high neuroticism and increased for those with high openness or perseverance and passion, suggesting that some personality traits are more or less suitable for working from home. **Conclusion:** To improve the productivity of all workers, these findings have practical implications for promoting appropriate maintenance of the residential environment and introducing flexible work styles that account for personality traits.

**Kawakubo et al. 2022.**

**Building and Environment, vol. 15.**

**User License:** Elsevier Connect COVID-19 resource centre

**Keywords:** COVID-19; information and communications technology; indoor environmental quality; Personality traits; Productivity; Residential environment; standard effective temperature; Telework; Working from home.

**Evidence Level:** 5A

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8755452/>

### **Developing a multilevel scale to assess retention of workers with disabilities**

**Background:** Persons with disabilities (PwD) face difficulties in employment. Despite extensive research on PwD in the workplace, there is lack of research on the factors behind retaining or terminating the job of a PwD. This study aims to address this gap by developing the Retaining Workers with Disability (RWD) model.

**Method:** Predicated on 1032 respondents with employment decision authority, we performed exploratory factor analysis (EFA) followed by confirmatory factor analysis (CFA) for convergent and discriminant validity of the RWD model. Next, we developed the two-rank model RWD-II and employed CFA for validation.

**Results:** We presented a dual-facet measurement tool for assessing employer attitudes towards retaining PwD in the workplace. Two dominant factors were measured, direct and indirect work-related items. Indices for both models (one and two-rank) showed a good fit. **Conclusion:** Our study highlighted two major factors influencing managers in the decision-making process of retaining workers with disabilities as follows: direct and indirect work-related concerns. The measure was validated using the RWD scale. By providing the tool to identify attitudes towards PwD work retention, we offer the first step in identifying and changing a negative approach toward this population in the workplace. Practical contributions are discussed.

**Krisi et al. 2022.**

**Journal of Occupational Rehabilitation, vol. 32, no. 1.**

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**Keywords:** COVID-19; disability; employment; rehabilitation; weights and measures.

**Evidence Level:** 5B

**Link:** <https://link.springer.com/article/10.1007/s10926-021-09984-5>

### **Capturing and analysing the working conditions of employees with disabilities in German social firms using focus groups**

**Background:** Social firms - a type of social enterprise - provide job opportunities to people with mental or intellectual, sensory, physical or multiple disabilities who are disadvantaged on the general labour market. Given the limited number of studies on working conditions of employees in inclusive workplaces, the aim of this study was to explore job demands and resources experienced by employees with disabilities in German social firms. **Methods:** Three focus groups were conducted between September and October 2020 with 14 employees with disabilities from social firms in the catering and cleaning sector in Germany. The Job Demands-Resources model was used as a theoretical basis for developing the semi-structured interview guide. Audiotaped data were transcribed verbatim, analysed deductively and inductively using the qualitative content analysis according to Mayring. **Results:** The results show that employees of social firms experience specific job demands and resources regarding work content, work organisation, social relations and work environment. Job demands were mainly reported with respect to work organisation, e.g. high workload, time pressure or challenges in collaboration, whereas social relationships with colleagues and supervisors were most frequently mentioned as important resources at the workplace. **Conclusion:** First exploratory study results on the working conditions of employees in social firms in Germany were obtained. Given the pivotal importance of employment for people with disabilities, the identified job demands and resources of this study highlight the relevance of a healthy workplace, especially for employees in social firms. Future interventional research is needed regarding the development, implementation and evaluation of workplace health promotion measures in social firms.

**Efimov et al. 2022.**

**BMC Public Health, vol. 22, no. 1.**

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**Keywords:** Employees; focus groups; job demands; job resources; occupational health; qualitative research; social enterprises; social firms; working conditions.

**Evidence Level:** 6B

**Link:** <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-12689-w>

### **Effect of gender, age and vaccine on reactogenicity and incapacity to work after COVID-19 vaccination: a survey among health care workers**

**Background:** The aim of our study was to assess the impact of gender and age on reactogenicity to three COVID-19 vaccine products: Biontech/Pfizer (BNT162b2), Moderna (mRNA-1273) and AstraZeneca (ChAdOx). Additional analyses focused on the reduction in working capacity after vaccination and the influence of the time of day when vaccines were administered. **Methods:** We conducted a survey on COVID-19 vaccinations and eventual reactions among 73,000 employees of 89 hospitals of the Helios Group. On May 19th, 2021 all employees received an email, inviting all employees who received at least 1 dose of a COVID-19 to participate using an attached link. Additionally, the invitation was posted in the group's intranet page. Participation was voluntary and non-traceable. The survey was closed on June 21st, 2021. **Results:** 8375 participants reported on 16,727 vaccinations. Reactogenicity was reported after 74.6% of COVID-19 vaccinations. After 23.0% vaccinations the capacity to work was affected. ChAdOx induced impairing reactogenicity mainly after the prime vaccination (70.5%), while mRNA-1273 led to more pronounced reactions after the second dose (71.6%). Heterologous prime-booster vaccinations with ChAdOx followed by either mRNA-1273 or BNT162b2 were associated with the highest risk for impairment (81.4%). Multivariable analyses identified the factors older age, male gender and vaccine BNT162b as independently associated with lower odds ratio for both, impairing reactogenicity and incapacity to work. In the comparison of vaccine schedules, the heterologous combination ChAdOx + BNT162b or mRNA-1273 was associated with the highest and the homologue prime-booster vaccination with BNT162b with the lowest odds ratios. The time of vaccination had no significant influence. **Conclusions:** Around 75% of the COVID-19 vaccinations led to reactogenicity and nearly 25% of them led to one or more days of work loss. Major risk factors were female gender, younger age and the administration of a vaccine other than BNT162b2. When vaccinating a large part of a workforce against COVID-19, especially in professions with a higher proportion of young and women such as health care, employers and employees must be prepared for a noticeable amount of absenteeism. Assuming vaccine effectiveness to be equivalent across the

vaccine combinations, to minimize reactogenicity, employees at risk should receive a homologous prime-booster immunisation with BNT162b2.

**Nachtigall et al. 2022.**

**BMC Infectious Diseases, vol. 22, no. 1.**

**User License:** *Creative Commons Attribution (CC BY 4.0)* (<https://creativecommons.org/licenses/by/4.0/>)

**Keywords:** COVID-19; circadian rhythm; reactogenicity; sex differences; vaccination; working capacity.

**Evidence Level:** 4B

**Link:** <https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-022-07284-8>

### **Association between mobile work and work ability: a longitudinal study under the impact of the COVID-19 pandemic**

**Background:** This study examines the effect of mobile work on work ability as direct predictor and as factor moderating workplace stressors and resources. Originally, the study focused on the effects of mobile work on work ability in a mobile test group compared to office workers. As the study period of 1 year collided with the beginning of the COVID-19 pandemic and lockdown restrictions, we can now explore the association of mobile work and work ability before and during the first year of the COVID-19 pandemic.

**Methods:** This longitudinal, exploratory study took place in a medium-sized company in the social insurance sector in Germany. We used a mixed-methods design (online survey and focus group interviews) with two survey dates 1 year apart (T0: summer/autumn 2019 (before COVID-19 pandemic), T1: summer 2020 (during COVID-19 pandemic, after first strict lockdown)). Quantitative data, which are reported here, were collected by means of an online questionnaire, which includes questions on mobile work and validated measures for work-related stressors and resources and work ability. Non-parametric tests, regression analysis, and logistic regression models were used for data analysis. **Results:** The linked data set of both survey dates includes N = 102 persons (men: 37%, mean age: 41-50 years). Interestingly, we found an improvement in work ability over the course of the study ( $p = 0.007$ ), although it included the first and most drastic COVID-19 restrictions in Germany. Before the pandemic, correlations between work ability and work-related stressors (e.g., work-privacy conflicts) and resources (e.g., sense of community) were evident. Some of these factors are moderated by mobile work. During the COVID-19 pandemic, mobile work was identified as independent factor for work ability. In addition, technology competence conviction gained importance as a personal resource in our cohort. **Conclusions:** Work ability can be influenced by many factors. Our study, which allowed for a comparison of work ability before and during COVID-19 pandemic, suggests that mobile work can be especially helpful to maintain work ability in times of change. Our findings support the notion that under normal conditions mobile work can influence work ability via work-related stressors and resources. In times of changes, it can have an independent effect on work ability. It must be assumed that the effects can be highly individual or context-specific.

**Berling et al. 2022.**

**International Archives of Occupational and Environmental Health, vol. 17, no.1-13 .**

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**Keywords:** Mobile work; occupational health; remote work; work ability.

**Evidence Level:** 5B

**Link:** <https://link.springer.com/article/10.1007/s00420-022-01849-5>

### **Occupational profile, psychosocial aspects, and work ability of Brazilian workers during COVID-19 pandemic: IMPPAC cohort**

**Background:** The IMPPAC cohort (Implications of the COVID-19 pandemic on psychosocial aspects and work ability among Brazilian workers) seeks to understand the impact of the pandemic on Brazilian workers. This article describes the occupational profile, psychosocial aspects, and work ability determined during the baseline and follow-up measurements of the cohort. **Methods:** Workers were invited to participate through media advertisements, social networks, and e-mails. From June to September 2020, 1211 workers were included in the cohort. Follow-up measurements finished on October 2021 with 633 workers. Data were collected through standardized questionnaires using Google Forms. Psychosocial aspects were assessed using the COPSOQ II-Br. Work ability was assessed using the Work Ability Index (WAI). **Results:** At baseline and follow-up, high proportion of workers were in the risk zone with regard to work pace,

emotional work demands, influence on work, work-family conflict, burnout, and stress. Approximately 75% of the workers reported good to excellent work ability at baseline and follow-up. **Conclusion:** The occupational profile, psychosocial aspects, and work ability of Brazilian workers from the IMPPAC cohort were described. Psychosocial aspects and WAI were similar at baseline and follow-up.

**Andrade et al. 2022.**

**Safety and Health at Work**, vol. 13, no. 1.

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**Keywords:** COPSOQ II; mental health; occupational health; SARS-CoV-2.

**Evidence Level:** 4B

**Link:** <https://www.sciencedirect.com/science/article/pii/S2093791121000986?via%3Dihub>

## Adapting to the Future of Work

### Aging Workforce

*This month explores the effect of age-diverse work environments and the retirement intentions among older workers.*

#### Age diversity climate affecting individual-level work-related outcomes

**Background:** The present study answers the call for more studies to investigate the age diversity climate's effect on individual-level outcomes. **Methods:** Building on the social identity approach and social exchange theory, we surveyed 110 Italian employees aged between 18 and 61 years old ( $M = 46.10$ ,  $SD = 10.02$ ) and investigated the role of age diversity climate in predicting intentions to quit (H1), job-related wellbeing (H2), and work engagement (H3). **Results:** Our findings confirmed the hypotheses (H1 and H2), showing the added effect of age diversity climate over and above age, job tenure, role clarity, job demands, job control, perceived support, and perceived job and organizational fit. In fact, age diversity climate accounted for a significant increase in the variance explained for two of the three hypothesized models (i.e., intentions to quit and job-related wellbeing, but not work engagement). **Discussion and Conclusion:** To conclude, this study contributes to the existing literature by showing the age diversity climate's predictive value for turnover intentions and job-related wellbeing, and corroborating the importance of supporting age diversity through a variety of Human Resources Management strategies.

**Bellotti et al. 2022.**

**International Journal of Environmental Research and Public Health**, vol. 19, no. 16.

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**Keywords:** Age diversity climate; intentions to quit; job-related wellbeing; work engagement.

**Evidence Level:** 5B

**Link:** <https://www.mdpi.com/1660-4601/19/5/3041>

#### Will they stay or will they go? Motivational profiles, retirement-related correlates, and retirement intentions among 58-72-year-old workers

**Background:** Demographic changes indicate that the number of people aged 60 years and above will double in the next 30 years, and politicians around the world have an interest in delaying retirement in order to benefit national economies by lowering the burden on public pension systems. **Methods:** In this study, it is examined whether and how combinations of multiple types of work motivation based on self-determination theory (SDT) would be associated with retirement-related factors and retirement intentions. **Results:** Using a person-centered approach to identify latent work motivation profiles among older workers, four profiles emerged: (1) the Low Motivation Profile with below-average levels on most motivational regulations, but in particular, lack identified work regulation; (2) the Autonomous Motivation Profile with higher levels of autonomous motivation and lower levels of controlled motivation and amotivation; (3) the High Motivation Profile with simultaneously high autonomous and controlled motivation; (4) the Amotivated Profile. Compared to the Low Motivation and Amotivated Profiles, the



Autonomous and the High Motivation profiles show higher levels of vigor and lower levels of job stress, exhaustion and turnover-, and retirement intentions. However, the High Motivation Profile seems to pay a cost because they experience significantly more job stress than employees in the Autonomous profile. In addition, variable-based correlations showed higher levels of vigor and lower levels of job stress, exhaustion, and turnover intentions to be associated with lower levels of retirement intentions. **Discussion and Conclusion:** The results are discussed in relation to managers and organizational endeavors to rebuild lost work identification and reduce extrinsic work motivation and amotivation in order to motivate older workers to stay longer at work.

**Halvari et al. 2022.**

**Frontiers in Psychology, vol. 3.**

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**Keywords:** Amotivation; autonomous work motivation; controlled work motivation; motivation profiles; retirement; self-determination theory.

**Evidence Level:** 5B

**Link:** <https://www.frontiersin.org/articles/10.3389/fpsyg.2022.807752/full>

## Technology

*This month, studies explore the effect of digitally transformed home offices and health app use on workers' stress and health status.*

### **Digitally transformed home office impacts on job satisfaction, job stress and job productivity. COVID-19 findings**

**Background:** In these times of successive lockdown periods due to the health crisis induced by COVID-19, this paper investigates how the usages of collaborative and communication digital tools (groupware, workflow, instant messaging and web conference) are related to the evolution of teleworkers' subjective well-being (job satisfaction, job stress) and job productivity comparing during and before the first lockdown in spring 2020. **Methods** Using a sample of 438 employees working for firms located in Luxembourg, this analysis enables, first, to highlight different profiles of teleworkers regarding the evolution of usages of these tools during the lockdown compared to before and the frequency of use during. Second, the analysis highlights that these profiles are linked to the evolution of job satisfaction, job stress and job productivity.

**Results:** Our main results show that (1) the profile that generates an increase in job productivity is the one with a combined mastered daily or weekly use of all of the four studied digital tools but at the expense of job satisfaction. On the contrary, (2) the use of the four digital tools both before and during the lockdown, associated with an increase in the frequency of use, appears to generate too much information flow to deal with and teleworkers may suffer from information overload that increases their stress and reduces their job satisfaction and job productivity. (3) The habit of using the four tools on a daily basis before the lockdown appears to protect teleworkers from most of the adverse effects, except for an increase in their job stress. Our results have theoretical and managerial implications for the future of the digitally transformed home office.

**Martin et al. 2022.**

**PLoS One, vol. 17, no. 3.**

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**Keywords:** Home office; job satisfaction; job stress; job productivity; COVID-19.

**Evidence Level:** 5B

**Link:** <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0265131>

### **Work-related stress, health status, and status of health apps use in Korean adult workers**

**Background:** Although health apps have been developed and utilized in many countries, there is no baseline study about what percentage of Korean workers use these types of health apps. Therefore, the purpose of this study was to describe the work-related stress, health status, and utilization of health apps of Korean adult workers. **Methods:** This descriptive study included 95 adults in South Korea. Demographic



variables, work-related stress, health status, and utilization of health apps were obtained using an online self-reported survey. Descriptive analyses were used to explore prevalence of each variable. **Results:** This study found that almost 65% of the participants fell into the higher work-related stress group. About 41.6% of the participants in this sample evaluated their general health status as fair to poor with 26.8% being overweight to obese and 11.6% having hypertension. However, only about 33.7% of the sample have used health apps. **Discussion and Conclusion:** Therefore, utilization of health apps as health and stress management tools should be encouraged at a public health level.

**Hwang et al. 2022.**

**International Journal of Environmental Research and Public Health**, vol. 19, no. 6.

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**Keywords:** Koreans; mobile applications; occupational stress.

**Evidence Level:** 5B

**Link:** <https://www.mdpi.com/1660-4601/19/6/3197>

## Guiding and Supporting Mental Health and Wellbeing

### Mental Health

*This month, the effects of working conditions, including job control, job security, work stress and the receipt of family-friendly employment benefits on mental health are explored.*

#### **Appreciation and job control predict depressive symptoms: results from the Study on Mental Health at Work**

**Background::** Depressive symptoms are a leading cause of disability retirement and sick leave. The aim of this study was to assess the risk of depressive symptoms in German employees and its associations with factors from both the occupational and the non-occupational domain and gender. **Methods:** In the second wave of the German Study of Mental Health at Work (SMGA), a representative sample of 2640 German employees (52% women) was studied. Depressive symptoms were assessed with the PHQ-9 questionnaire. Psychosocial occupational and non-occupational conditions were assessed with quantitative interviews. In this cross-sectional sample, the association of these factors with depressive symptoms was examined using logistic regression models. **Results:** Factors from both the occupational and the non-occupational domain were associated with risk of depressive symptoms. Low appreciation from superior ( $OR_{men} 2.1$  (95% CI 1.2-3.7);  $OR_{women} 3.2$  (95% CI 2.1-4.8)), low job control ( $OR_{men} 2.9$  (95% CI 1.6-5.4);  $OR_{women} 1.6$  (95% CI 1.0-2.5)), and critical life events ( $OR_{men} 3.0$  (95% CI 1.6-5.4);  $OR_{women} 2.3$  (95% CI 1.5-3.7)) had the strongest association with risk of depressive symptoms. The association with quantitative demands was stronger in caregivers than in non-caregivers. The results indicated possible differences in the associations of working conditions between men and women, and between family caregivers and non-caregivers.

**Conclusion:** Factors from both work and private life are associated with depressive symptoms, especially appreciation, job control, and critical life events. Gender differences, with respect to appreciation and influence at work, suggest a more gender sensitive approach to psychosocial occupational health research and interventions.

**Pohrt et al. 2022.**

**International Archives of Occupational and Environmental Health**, vol. 95, no. 2.

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**Keywords:** Appreciation; caregivers; critical life events; depressive symptom; job control; PHQ-9; S-MGA study; working conditions.

**Evidence Level:** 4B

**Link:** <https://link.springer.com/article/10.1007/s00420-021-01735-6>

### **A nationwide cross-sectional study of workers' mental health during the COVID-19 pandemic: Impact of changes in working conditions, financial hardships, psychological detachment from work and work-family interface**

**Background:** The COVID-19 disease has changed people's work and income. While recent evidence has documented the adverse impact of these changes on mental health outcomes, most research is focused on frontline healthcare workers and the reported association between income loss and mental health comes from high-income countries. In this study we examine the impact of changes in working conditions and income loss related to the COVID-19 lockdown on workers' mental health in Argentina. We also explore the role of psychological detachment from work and work-family interaction in mental health. **Methods:** A total of 1049 participants aged between 18 and 65 who were working before the national lockdown in March 2020 were recruited using a national random telephone survey. Work conditions included: working at the usual workplace during the pandemic, working from home with flexible or fixed schedules, and being unemployed or unable to work due to the pandemic. Measures of financial hardship included income loss and self-reported financial problems related to the outbreak. Work-family interface included measures of work-family conflict (WFC) and family-work conflict (FWC). Mental health outcomes included burnout, life satisfaction, anxiety and depressive symptoms. Data were collected in October 2020. **Results:** Home-based telework under fixed schedules and unemployment impact negatively on mental health. Income loss and particularly self-reported financial problems were also associated with deterioration of mental health. More than half of the participants reported financial problems, and those who became unemployed during the pandemic experienced more often financial problems. Finally, psychological detachment from work positively influenced mental health; WFC and FWC were found to negatively impact on mental health. **Conclusions:** Countries' policies should focus on supporting workers facing economic hardships and unemployment to ameliorate the COVID-19' negative impact on mental health. Organisations can protect employees' mental health by actively encouraging psychological detachment from work and by help managing work-family interface. Longitudinal studies are needed to more thoroughly assess the long-term impact of the COVID-19-related changes in work and economic turndown on mental health issues.

**Trógolo et al. 2022.**

**BMC Psychology, vol. 10, no. 1.**

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**Keywords:** COVID-19; Financial problems; Income loss; Mental health; Telework; Unemployment.

**Evidence Level:** 4B

**Link:** <https://bmcpyschology.biomedcentral.com/articles/10.1186/s40359-022-00783-y>

### **Employees receiving inpatient treatment for common mental disorders in Germany: factors associated with time to first and full return to work**

**Background:** In Germany, return to work (RTW) after inpatient treatment for common mental disorders (CMDs) is a complex process at the intersection of the mental healthcare system and the workplace. This study examined (1) the time to first and full RTW and (2) associated factors among employees receiving inpatient treatment for CMDs. **Methods:** In this prospective cohort study, employees receiving inpatient psychiatric or medical rehabilitation treatment for CMDs were interviewed by phone during their last week before discharge. Follow-up interviews were conducted after 6, 12, and 18 months. Health-, personal, and work-related factors were used from baseline measurement. Parametric survival analysis was conducted to identify factors associated with time to first and full RTW. **Results:** A total of N = 269 participants who stayed at a psychiatric clinic or a medical rehabilitation facility were included. Almost all participants (n = 252, 94%) from both treatment settings reported a first RTW and a full RTW. The time to first and full RTW was shortest among participants from medical rehabilitation (both median 6 days) and longer among participants from psychiatric treatment (median 17 days to first RTW and 73 days to full RTW). While only health-related and personal factors were associated with time to first RTW, leadership quality and needed individual RTW support were associated with time to full RTW. **Conclusions:** More attention to work accommodation needs for RTW in clinical practice and coordinated actions towards RTW in collaboration with key RTW stakeholders in the workplace may support a timely RTW. Clinical Registration Number DRKS00010903, retrospectively registered.

**Sikora et al. 2022.**

**Journal of Occupational Rehabilitation, vol. 32, no. 1.**

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**Keywords:** Mental disorders; psychiatric hospitals; rehabilitation centers; return to work; survival analysis.

**Evidence Level:** 4B

**Link:** <https://link.springer.com/article/10.1007/s10926-021-09985-4>

### **Developing an intervention and evaluation model of outdoor therapy for employee burnout: Unraveling the interplay between context, processes, and outcomes**

**Background:** Burnout is a major societal issue adversely affecting employees' health and performance, which over time results in high sick leave costs for organizations. Traditional rehabilitation therapies show suboptimal effects on reducing burnout and the return-to-work process. Based on the health-promoting effects of nature, taking clients outdoors into nature is increasingly being used as a complementary approach to traditional therapies, and evidence of their effectiveness is growing. Theories explaining how the combination of general psychological support and outdoor-specific elements can trigger the rehabilitation process in outdoor therapy are often lacking, however, impeding its systematic research.

**Aim:** The study aims to develop an intervention and evaluation model for outdoor therapy to understand and empirically evaluate whether and how such an outdoor intervention may work for rehabilitation after burnout.

**Methodological approach:** We build on the exemplary case of an outdoor intervention for rehabilitation after burnout, developed by outdoor clinical psychologists in Netherlands. We combined the generic context, process, and outcome evaluation model and the burnout recovery model as an overarching deductive frame. We then inductively specified the intervention and evaluation model of outdoor therapy, building on the following qualitative data: semi-structured interviews with outdoor clinical psychologists and former clients; a content analysis of the intervention protocol; and reflective meetings with the intervention developers and health promotion experts. **Results:** We identified six key outdoor intervention elements: (1) physical activity; (2) reconnecting body and mind; (3) nature metaphors; (4) creating relationships; (5) observing natural interactions; and (6) experiential learning. The results further showed that the implementation of these elements may facilitate the rehabilitation process after burnout in which proximal, intermediate, and distal outcomes emerge. Finally, the results suggested that this implementation process depends on the context of the therapist (e.g., number of clients per day), therapy (e.g., privacy issues), and of the clients (e.g., affinity to nature). **Conclusion:** The intervention and evaluation model for outdoor therapy shows how key outdoor intervention elements may contribute to the rehabilitation process after burnout. However, our model needs to be further tested among a larger group of clients to empirically evaluate whether and how outdoor therapy can support rehabilitation.

**Pijpker et al. 2022.**

**Frontiers in Psychology, vol. 3.**

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**Keywords:** Burnout; context; evaluation; intervention; nature; resources; salutogenesis.

**Evidence Level:** 5B

**Link:** <https://www.frontiersin.org/articles/10.3389/fpsyg.2022.785697/full>

### **Working mothers during COVID-19: a cross-sectional study on mental health status and associations with the receipt of employment benefits**

**Background:** Beyond the sweeping physiological effects of COVID-19 infections in 2020 and 2021, the psychosocial impacts of lockdowns, social distancing, and the associated disruptions to daily life have brought on a simultaneous mental health crisis, particularly among many working mothers who are disproportionately balancing childcare, virtual schooling, and employment vulnerability. The aim of this study was to measure the mental health status of working mothers in the United States and associations with the provision of family-friendly employment benefits one year into the pandemic. **Methods:** Cross-sectional data were collected from a sample of working mothers in the U.S. using an online survey of mental health status and the receipt of employer-provided family-friendly benefits. Mental health was measured with the Kessler 6 (K-6) and the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS). Perceived helpfulness of benefits was assessed through self-reported Likert-scale scores of 0 (not at all helpful) to 4 (extremely helpful) to determine mean helpfulness scores for benefit types. Multivariable

logistic regression analyses were conducted to determine associations between receipt of employment benefits and serious mental illness (SMI). **Results:** A total of 728 participants met the study criteria, 83.7% were non-Hispanic/Latino white and 61.1% were 35-44 years of age. Among study participants, 54.3% (n = 395) and 21.8% (n = 159) reported psychological distress levels associated with moderate mental illness (MMI) and serious mental illness (SMI), respectively. Not receiving benefits was associated with a 50% increase in odds of SMI (aOR = 1.50, 95% CI [1.03-2.20], p = 0.036). Benefits perceived to be the most helpful for participants were flexible hours/schedule (3.5; SD ± 0.9), flexible work location (3.3; SD ± 1.1), and supplemental paid time off (3.1; SD ± 1.1), with mean scores above very helpful. **Conclusion:** Results suggest employment benefits may help support the mental health of working mothers and provide a call to action to employers and policy stakeholders to develop solutions addressing gaps in workplace benefits and mental health support for working parents, with sustainable reform in mind to mitigate employment benefit inequities exposed by the pandemic.

**Kirwin et al. 2022.**

**BMC Public Health, vol. 22, no. 1.**

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**Keywords:** COVID-19; employment benefits; family friendly benefits; Kessler 6 psychological distress scale (k6); mental health; Short warwick edinburgh mental well-being scale (swemwbs); working mothers.

**Evidence Level:** 4B

**Link:** <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-12468-z>

### **Mental health and quality of life for disaster service workers in a province under COVID-19**

**Background:** Healthcare workers and disaster service workers have been reported to be vulnerable to mental health problems during outbreaks of infectious diseases such as the COVID-19 pandemic. This study aimed to investigate the psychosocial characteristics of disaster service workers in charge of COVID-19-related work and also identify the factors affecting their quality of life. **Methods:** From June 2020 to June 2021, a survey was conducted of 526 disaster service workers in charge of COVID-19-related work. This included those working in public health care centers (PHC), 119 rescue and emergency medical services (119 REMS), public servants of city hall (PS), and police officers. The Korean version of the Fear of COVID-19 Scale, Patient Health Questionnaire-15, Hospital Anxiety and Depression Scale, Insomnia Severity Index, Connor-Davidson Resilience Scale, and World Health Organization quality of life assessment instrument brief form were used. A one-way ANOVA was conducted, and a stepwise regression analysis was carried out to determine the factors affecting quality of life. **Results:** Regarding quality of life, 119 REMS (180.64 ± 26.20) scored significantly higher than PHC (165.76 ± 23.73) and PS (163.90 ± 23.60), while police officers (176.87 ± 23.17) scored significantly higher than PS (163.90 ± 23.60) ( $F = 12.373$ ,  $p < 0.001$ ). Resilience ( $\beta = 0.897$ ,  $p < 0.01$ ) was the most significant explanatory variable, and together with insomnia ( $\beta = 0.154$ ,  $p < 0.01$ ), depression ( $\beta = -0.152$ ,  $p < 0.01$ ), and COVID-19 anxiety ( $\beta = -0.057$ ,  $p < 0.01$ ) accounted for 91.8% of the explanatory variance with regard to quality of life. **Discussion:** Quality of life was found to be negatively correlated with insomnia, depression, and COVID-19 anxiety while being positively correlated with resilience. Therefore, active interventions are needed to improve the resilience of disaster service workers.

**Na et al. 2022.**

**Journal of Clinical Medicine, vol. 11, no. 6.**

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**Keywords:** Mental health; quality of life; disaster service workers; COVID-19; healthcare; psychosocial characteristics.

**Evidence Level:** 5B

**Link:** <https://www.mdpi.com/2077-0383/11/6/1600>

### **Comparison of work-related stress in cluster of workers' suicides in Korea: Analysis of industrial accident compensation insurance, 2010-2017**

**Background:** There is limited research on the heterogeneity of worker suicides. We compared differences in workers' suicides by clustering suicide deaths. **Methods:** From 2010 to 2017, 353 suicide deaths were claimed in the Industrial Accident Compensation Insurance; variables were coded using a standardized

methodology. A two-step cluster analysis classified the clusters based on demographic and employment conditions. Details of the suicide, clinical variables, personal stresses, and work-related stresses were compared using the chi-square test and one-way analysis of variance. **Results:** We identified five clusters and they differed particularly in work-related stress. "Responsibility-burdened type" experienced excessive responsibility as managers; "role-changed type" experienced a sudden and unpredictable role change as clerks or sales workers; "risk-exposed type" experienced physical risk factors at work (working alone, outdoors, and in shifts) as machine operating and assembling workers, or craft and related trades workers; "job-insecurity type" experienced unstable employment (irregular, nonpermanent) as elementary or service workers; "workplace-violence type" was mainly unmarried women who lived alone, and experienced interpersonal conflict and violence as professionals and related workers. There were no differences between clusters in clinical variables (except problem drinking) and personal stresses. **Conclusion:** Interventions to alleviate work-related stress in worker clusters are needed to prevent suicide in workers.

**Jang et al. 2022.**

**International Journal of Environmental Research and Public Health**, vol. 19, no. 5.

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**Keywords:** Cluster analysis; industrial accident compensation insurance; interpersonal conflict; job insecurity; physical risk; psychosocial factor; responsibility; role change; suicide; work-related stress.

**Evidence Level:** 5B

**Link:** <https://www.mdpi.com/1660-4601/19/5/3013>

### **The fear of COVID-19 and job insecurity impact on depression and anxiety: An empirical study in China in the COVID-19 pandemic aftermath**

**Background:** The employees' psychological health and resilience in times of emergency and general uncertainty was chosen due to the immense implications for economics, entrepreneurs, psychologists and psychiatrists, and policymakers. **Methods:** This study aims to provide an insight into uncertainty-induced anxiety and depression among Chinese employees in the aftermath of the COVID-19 outbreak. Analysis performed in the context of China in the COVID-19 pandemic aftermath is significant due to the universal nature of external shock impact on psychological welfare, applicable across nations and business sectors and in similar contexts. The statistical analysis was performed with SEM software AMOS version 23. The research model consisting of fear of COVID-19, job insecurity, anxiety, depression, was empirically tested. A purposive sampling technique was applied with the online questionnaire shared with employees in companies located in China. Respondents were working in educational services, information technology, engineering, electronics, and other sectors on white-collar jobs. The data collection was conducted from May to August 2020, in the aftermath of the COVID-19 pandemic in China. The research sample consisting of 283 respondents was used for analysis. Path analysis was performed, and standardized parameter estimates, standard errors, and p-values were calculated. **Results:** The results indicate a positive and significant impact of job insecurity on depression and anxiety. Furthermore, results indicate that the fear of COVID-19 significantly impacts anxiety and depression but does not impact job insecurity. **Discussion and Conclusion:** The findings can be used in a multidisciplinary effort to mitigate the psychological damage. Furthermore, they complement the ongoing epidemiological and scientific discourse on people's personal health and choice of coping.

**Khudaykulov et al. 2022.**

**Current Psychology**, vol. 9, no. 1-14.

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**Keywords:** Anxiety; COVID-19 mental health; Depression during COVID-19; Fear of COVID-19; Job insecurity.

**Evidence Level:** 5B

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8906526/>



### **Work-related predictors of mental health, presenteeism, and professional quality of life following exposure to a potentially traumatic event in child protection workers**

**Background:** Exposure to potentially traumatic events (PTEs) at work can have a negative impact on the psychological health and work life of child protection workers (CPWs). The most common form of work-related PTE experienced by CPWs consists of aggressive behaviours from the youths or their parents.

**Objective:** This study aims to identify modifiable work-related variables that might influence the probability of experiencing impaired mental health and professional adjustment following a PTE. **Method:** The participants were CPWs from two youth social services organizations in Canada. A survey was administered to CPWs within one month of a work-related PTE (Time 1;  $n = 176$ ), two months after the PTE (Time 2;  $n = 168$ ), six months after the PTE (Time 3;  $n = 162$ ), and 12 months after the PTE (Time 4;  $n = 161$ ). Lagged linear mixed models allowed for the independent variables measured at Time 1, Time 2, and Time 3 to predict the outcome variables as measured on the next assessment (Time 2, Time 3, and Time 4, respectively). The outcomes of interest were insomnia symptoms, depressive symptoms, anxiety symptoms, and post-traumatic stress symptoms, as well as presenteeism (inadequate work performance) and professional quality of life. **Results:** Confidence in one's own ability to cope with service user aggression negatively predicted depressive, anxiety, and post-traumatic stress symptoms as well as presenteeism, and positively predicted professional quality of life. The perception of job safety negatively predicted depressive, anxiety, and post-traumatic stress symptoms, and positively predicted professional quality of life. Finally, psychological demands from work positively predicted all mental health outcomes as well as presenteeism, and negatively predicted professional quality of life. **Conclusions:** This study identified work-related variables that could be modified in an attempt to prevent the negative impacts of exposure to work-related PTEs, especially, aggressive behaviours from the service users.

**Guay et al. 2022.**

**European Journal of Psychotraumatology**, vol. 13, no. 1.

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**Keywords:** PTSD; trauma; longitudinal design; mental health; protective factors; risk factors.

**Evidence Level:** 5B

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8896205/>

### **Risk communication about work-related stress disorders in healthcare workers: a scoping review**

**Background:** Healthcare workers are at risk of stress-related disorders. Risk communication can be an effective preventive health measure for some health risks, but is not yet common in the prevention of stress-related disorders in an occupational healthcare setting. The overall aim is to examine whether risk communication was part of interventions aimed at the prevention of stress-related disorders in healthcare workers. **Method:** We performed a scoping review using the framework of Arksey and O'Malley. We searched in Medline, Web of Science and PsychInfo for studies reporting on preventive interventions of stress-related disorders in healthcare workers between 2005 and December 2020. Studies were included when the intervention reported on at least one element of risk communication and one goal. We predefined four elements of risk communication: risk perception, communication of early stress symptoms, risk factors and prevention; and three goals: inform, stimulate informed decision-making and motivate action. **Results:** We included 23 studies that described 17 interventions. None of the included interventions were primarily developed as risk communication interventions, but all addressed the goals. Two interventions used all four elements of risk communication. The prominent mode of delivery was face to face, mostly delivered by researchers. Early stress symptoms and risk factors were measured by surveys. **Conclusions:** Risk communication on risk factors and early signs of stress-related disorders is not that well studied and evaluated in an occupational healthcare setting. Overall, the content of the communication was not based on the risk perception of the healthcare workers, which limited the likelihood of them taking action.

**Emal et al. 2022.**

**International Archives of Occupational and Environmental Health**, vol. 16, no. 1-14.

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**Keywords:** Health communication; healthcare workers; occupation disease; prevention; risk factors; trauma and stress-related disorders.

**Evidence Level:** 6A

**Link:** <https://link.springer.com/article/10.1007/s00420-022-01851-x>

### **Precarious work as risk factor for 5-year increase in depressive symptoms**

**Background:** The aim was to investigate the longitudinal relationship between precarious work and depressive symptoms in a representative cohort of employees in Germany. **Methods:** In the German Study on Mental Health at Work (S-MGA) ( $n = 2009$ ), depressive symptoms were assessed by the Patient Health Questionnaire (PHQ-9). Precarious work was measured through baseline (2012) self-reported job insecurity, marginal part-time, fixed-term contract, hourly wage and during follow-ups 2012-2017-unemployment. Among employees without depressive symptoms at baseline (2012), we ran logistic regression analyses stratified by gender with depressive symptoms at follow-up in 2017 as the dependent variable, adjusting for baseline (2012) age, gender, socioeconomic position and partner status.

**Results:** Among men, job insecurity (OR: 2.47; 95% CI: 1.37-4.48) and low wage (3.79; 1.64-8.72) at baseline were significantly associated with depressive symptoms at follow-up. Among women, indicators of precarious work were not associated with depressive symptoms at follow-up. Among men, a cumulative exposure index of precarious work was significantly associated with the development of depressive symptoms (one indicator: 1.84; 0.94-3.60,  $\geq$ two indicators: 7.65; 3.30-17.73). This index was not associated with depressive symptoms among women. The population attributable fraction of precarious work due to depressive symptoms among men was approximately 30%.

**Conclusions:** Among employees in Germany, precarious work seems to be a risk factor for the subsequent development of depressive symptoms among men, but not among women. Research on precarious employment in different countries is needed.

**Demiral et al. 2022.**

**International Journal of Environmental Research and Public Health, vol. 19, no. 6.**

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**Keywords:** Mental health; non-standard work; precarious work; prospective analyses.

**Evidence Level:** 5B

**Link:** <https://www.mdpi.com/1660-4601/19/6/3175>

### **Worker and manager perceptions of the utility of work-related mental health literacy programmes delivered by community organisations: a qualitative study based on the theory of planned behaviour**

**Background:** Reluctance to seek help is a leading contributor to escalating mental injury rates in Australian workplaces. We explored the benefit of using community organisations to deliver mental health literacy programmes to overcome workplace barriers to help-seeking behaviours. **Design:** This study used a qualitative application of the theory of planned behaviour to examine underlying beliefs that may influence worker's intentions to participate in mental health literacy programmes delivered by community organisations and manager support for them. **Setting:** This study took place within three large white-collar organisations in the Australian state of Victoria. **Participants:** Eighteen workers and 11 managers ( $n=29$ ) were interviewed to explore perspectives of the benefits of such an approach. **Results:** Community organisations have six attributes that make them suitable as an alternative mental health literacy programme provider including empathy, safety, reliability, trustworthiness, social support and inclusivity. Behavioural beliefs included accessibility, understanding and objectivity. The lack of suitability and legitimacy due to poor governance and leadership was disadvantages. Normative beliefs were that family and friends would most likely approve, while line managers and colleagues were viewed as most likely to disapprove. Control beliefs indicated that endorsements from relevant bodies were facilitators of participation. Distance/time constraints and the lack of skills, training and lived experiences of coordinators/facilitators were seen as barriers. **Conclusions:** Identifying workers' beliefs and perceptions of community organisations has significant implication for the development of effective community-based strategies to improve worker mental health literacy and help seeking. Organisations with formal governance structures, allied with government, peak bodies and work-related mental health organisations would be most suitable. Approaches should focus on lived experience and be delivered by qualified

facilitators. Promoting supervisor and colleague support could improve participation. Models to guide cross-sector collaborations to equip community organisations to deliver work-related mental health literacy programmes need to be explored.

**Crisan et al. 2022.**

**BMJ Open, vol. 12, no. 3.**

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**Keywords:** Health & safety; health policy; mental health.

**Evidence Level:** 5A

**Link:** <https://bmjopen.bmj.com/content/12/3/e056472.long>

### **Effects of a person-centred eHealth intervention for patients on sick leave due to common mental disorders (promise study): Open randomized controlled trial**

**Background:** Sick leave due to common mental disorders (CMDs) is a public health problem in several countries, including Sweden. Given that symptom relief does not necessarily correspond to return to work, health care interventions focusing on factors that have proven important to influence the return to work process, such as self-efficacy, are warranted. Self-efficacy is also a central concept in person-centered care.

**Objective:** The aim of this study is to evaluate the effects of a person-centered eHealth intervention for patients on sick leave due to CMDs. **Methods:** A randomized controlled trial of 209 patients allocated to either a control group (107/209, 51.2%) or an intervention group (102/209, 48.8%) was conducted. The control group received usual care, whereas the intervention group received usual care with the addition of a person-centered eHealth intervention. The intervention was built on person-centered care principles and consisted of telephone support and a web-based platform. The primary outcome was a composite score of changes in general self-efficacy (GSE) and level of sick leave at the 6-month follow-up. An intention-to-treat analysis included all participants, and a per-protocol analysis consisted of those using both the telephone support and the web-based platform. **Results:** At the 3-month follow-up, in the intention-to-treat analysis, more patients in the intervention group improved on the composite score than those in the control group (20/102, 19.6%, vs 10/107, 9.3%; odds ratio [OR] 2.37, 95% CI 1.05-5.34;  $P=.04$ ). At the 6-month follow-up, the difference was no longer significant between the groups (31/100, 31%, vs 25/107, 23.4%; OR 1.47, 95% CI 0.80-2.73;  $P=.22$ ). In the per-protocol analysis, a significant difference was observed between the intervention and control groups at the 3-month follow-up (18/85, 21.2%, vs 10/107, 9.3%; OR 2.6, 95% CI 1.13-6.00;  $P=.02$ ) but not at 6 months (30/84, 35.7%, vs 25/107, 23.4%; OR 1.8, 95% CI 0.97-3.43;  $P=.06$ ). Changes in GSE drove the effects in the composite score, but the intervention did not affect the level of sick leave. **Conclusions:** A person-centered eHealth intervention for patients on sick leave due to CMDs improved GSE but did not affect the level of sick leave.

**Cederberg et al. 2022.**

**JMIR Mental Health, vol. 9, no. 3.**

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**Keywords:** Anxiety; depression; intervention; mHealth; mobile phone; patient-centered care; person-centered care; randomized controlled trial; sickness absence; stress; telehealth.

**Evidence Level:** 2B

**Link:** <https://mental.jmir.org/2022/3/e30966/>

### **The association of COVID-19 employment shocks with suicide and safety net use: An early-stage investigation**

**Background:** This paper examines whether the COVID-19-induced employment shocks are associated with increases in suicides and safety net use in the second and third quarters of 2020. **Methods:** We exploit plausibly exogenous regional variation in the magnitude of the employment shocks in Japan and adopt a difference-in-differences research design to examine and control for possible confounders. **Results:** Our preferred point estimates suggest that a one-percentage-point increase in the unemployment rate in the second quarter of 2020 is associated with, approximately, an additional 0.52 suicides, 28 unemployment benefit recipients, 88 recipients of a temporary loan program, and 10 recipients of public assistance per 100,000 population per month. A simple calculation based on these estimates suggests that if a region experienced a one-percentage-point increase in the unemployment rate caused by the COVID-19 crisis in

the second quarter of 2020, which is roughly equivalent to the third-highest regional employment shock, this would be associated with 37.4%, 60.5%, and 26.5% increases in the total, female, and male suicide rates respectively in July 2020 compared with July 2019. **Discussion and Conclusion:** These results are primarily correlational rather than causal due to the limitation of our data and research design, but our baseline findings are robust to several different model specifications.

**Ando et al. 2022.**

**PLoS One, vol. 17, no. 3.**

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**Keywords:** COVID-19; suicide; mental health; employment shocks.

**Evidence Level:** 5B

**Link:** <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0264829>

### **The association between working posture and workers' depression**

**Background:** Various studies have focused on the association between physical health and working posture. However, little research has been conducted on the association between working posture and mental health, despite the importance of workers' mental health. **Methods:** This study aimed to examine the association between working posture and workers' depression. A total of 49,877 workers were analyzed using data from the 5th Korean Working Conditions Survey. We utilized multiple logistic regression to analyze the variables associated with workers' depression. **Results:** This study showed that several working postures, such as tiring or painful positions, lifting or moving people, standing, and sitting, were associated with depression in workers. Furthermore, occupation types, job satisfaction, and physical health problems related to back pain and pain in upper (neck, shoulder, and arm) and lower (hip, leg, knee, and foot) body parts were associated with workers' depression. **Discussion and Conclusion:** Therefore, this study demonstrated that working posture is associated with workers' depression. In particular, working postures causing musculoskeletal pain, improper working postures maintained for a long time, and occupation types were associated with workers' depression. Our findings demonstrate the need for appropriate management and interventions for addressing pain-inducing or improper working postures in the workplace.

**Kim 2022.**

**Healthcare (Basel), vol. 10, no. 3.**

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**Keywords:** Depression; occupation health; workers; working posture.

**Evidence Level:** 4B

**Link:** <https://www.mdpi.com/2227-9032/10/3/477>

## **Bullying and Harassment**

*This month, studies focus on the effect of workplace incivility on workers wellbeing and health.*

### **Bullying behavior and employee well-being: how do different forms of social support buffer against depression, anxiety and exhaustion?**

**Background:** Workplace bullying has severe negative consequences for the well-being of targeted employees. Previous research suggests that social support may buffer against such adverse effects. However, it remains unclear if different forms of support have equally strong effects and if support buffers equally effectively against different outcomes. Further, little is known about social support as a mitigating factor in remote occupational groups such as seafarers. This study examines the buffering effects of four forms of support (instrumental and emotional peer support, company support, non-work support) on three aspects of employee well-being (depression, anxiety, and exhaustion) among seafarers. **Methods:** Responses to a cross-sectional online survey from a convenience sample of 414 seafarers on international commercial vessels were analyzed using moderated regression analyses with PROCESS. **Results:** Exposure to workplace bullying behavior increased seafarers' depression, anxiety and exhaustion. Instrumental peer support and non-work support buffered the negative impact of bullying on depression. The impact of

bullying on exhaustion was buffered by company support. The impact of bullying on anxiety was not buffered by any of the four forms of support. **Conclusion:** Extending previous research, the findings suggest that the interaction between workplace bullying and support depends not only on the source of support, but also on the type of support and the outcome considered. While support from colleagues on board was important for seafarers, company and non-work support must not be overlooked. Interventions should, therefore, encourage the development of peer support and ensure access to shore-based support for workers in remote locations.

**Paukstat et al. 2022.**

**International Archives of Occupational and Environmental Health, vol. 11, no. 1-12.**

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**Keywords:** Exhaustion; maritime industry; mental health; social support; workplace bullying.

**Evidence Level:** 4A

**Link:** <https://link.springer.com/article/10.1007/s00420-022-01844-w>

### **The embodiment of insult: A theory of biobehavioral response to workplace incivility**

**Background and Methods:** This article builds a broad theory to explain how people respond, both biologically and behaviorally, when targeted with incivility in organizations. Central to our theorizing is a multifaceted framework that yields four quadrants of target response: reciprocation, retreat, relationship repair, and recruitment of support. **Discussion and Conclusion:** We advance the novel argument that these behaviors not only stem from biological change within the body but also stimulate such change. Behavioral responses that revolve around affiliation and produce positive social connections are most likely to bring biological benefits. However, social and cultural features of an organization can stand in the way of affiliation, especially for employees holding marginalized identities. When incivility persists over time and employees lack access to the resources needed to recover, we theorize, downstream consequences can include harms to their physical health. Like other aspects of organizational life, this biobehavioral theory of incivility response is anything but simple. But it may help explain how seemingly "small" insults can sometimes have large effects, ultimately undermining workforce well-being. It may also suggest novel sites for incivility intervention, focusing on the relational and inclusive side of work. The overarching goal of this article is to motivate new science on workplace incivility, new knowledge, and ultimately, new solutions.

**Cortina et al. 2022.**

**Journal of Management, vol. 48, no. 3.**

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**Keywords:** Affiliation; incivility; inclusion; physiology; stress.

**Evidence Level:** 6A

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8918878/>

### **Frontline service employees' profiles: Exploring individual differences in perceptions of and reactions to workplace incivility**

**Background:** Employee turnover is a big issue in the service industry, which can be significantly affected by job stressors including workplace incivility. **Methods:** This exploratory study aims to identify the frontline service employees' profiles exploring to what extent individuals may have different perceptions of incivility and social supports at work and showing different reactions (job outcomes). In a cross-sectional study, 291 completed questionnaires from a sample of Norwegian frontline service employees were subjected to correlation analysis, K-means clustering, and post hoc ANOVA analysis with Bonferroni correction. **Results:** Cluster analysis revealed three distinct clusters of employees with different profiles, which indicated that those who perceived the highest level of workplace incivility and the lowest level of social supports at work showed the highest turnover intention compared to that of others. Moreover, employees with longer tenure and the highest perception of social supports at work coped better with workplace incivility and showed the lowest turnover intention.

**Namin et al. 2022.**

**Behavioral Sciences (Basel), vol. 12, no. 3.**

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**Keywords:** Cluster analysis; frontline service employees; social supports at work; turnover intention; workplace incivility.

**Evidence Level:** 4B

**Link:** <https://www.mdpi.com/2076-328X/12/3/76>

## Psychosocial Issues

*This month, studies explore the role of work-time control, working from home, work-related stress, and self-reported preferences of indoor environments on psychosocial health, and the positive effects of music therapy and an online psychoeducational website.*

### Probe into the role of music therapy in workplace health management

**Background:** With the rapid development of modern society, the rhythm of people's life and work is also forced to speed up. Stress from various fields makes people's health worse and worse. There are all kinds of pressures, and everyone in the torrent of the times has to face them. All kinds of pressures include life pressure, study pressure, and work pressure. Work pressure mainly comes from the pressure source, the individual's cognition of the pressure source, and the state of tension. Once too much work pressure is generated, it will bring unnecessary trouble to employees' lives and work and will also affect the company's interests. How to effectively alleviate work pressure is a problem that we urgently need to solve now. Specific problems are analyzed in detail. First, analyze the causes of work pressure. First, the pressure source is identified, and the pressure source generally exists objectively. It generally includes heavy work tasks, long working hours, and frequent job transfers. It is not easy to go through the employees themselves. Second is change, so this requires changing the individual's perception of the source of stress and the state of tension. In the continuous practice and research process of predecessors, some effective methods have been found, and music therapy is one of many methods, and music therapy has a wider range of effects and longer-lasting effects. **Discussion and Conclusion:** This article mainly introduces how to effectively use music therapy in the work environment. It also includes a specific analysis of specific problems. The employees are mainly divided into mental workers and manual workers, and they are provided with different music therapy programs. The role of music therapy in workplace health management is such that it can effectively alleviate the work pressure of employees, enhance the feelings between employees, and improve the work efficiency of employees. Finally, the paper is summarized.

**Li 2022.**

**Journal of Healthcare Engineering, vol. 4.**

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**Keywords:** Music therapy; workplace health; work management.

**Evidence Level:** 6A

**Link:** <https://www.hindawi.com/journals/jhe/2022/9999905/>

### Work-time control and exhaustion: Internal work-to-home interference and internal home-to-work interference as mediators

**Background:** Strong work-time control (WTC) has been linked to reduced employee exhaustion, with work-to-home interference as an underlying mechanism. **Methods:** In this study, we aimed to investigate the mediation effect of both directions of internal work-home interference, namely internal work-to-home interference (IWHI) and internal home-to-work interference (IHWI). The analysis is based on data from the 2015, 2017, and 2019 BAuA-Working Time Survey, a representative German panel study. Cross-lagged panel models were estimated separately for IWHI and IHWI, based on the balanced panel (n = 3390). We investigated the hypothesized indirect as well as potential direct, reversed, and reciprocal effects of the constructs. **Results:** WTC had a small but significant indirect effect on exhaustion via IWHI. Contrary to assumptions, WTC positively affected IHWI. Unexpectedly, there was no significant effect of IHWI on exhaustion. Hence, only IWHI was identified to mediate WTC's effect on exhaustion. **Discussion and Conclusion:** This implies that WTC helps employees avoid exhaustion from psychological preoccupation with work during free time. In addition, analyses suggested reversed and reciprocal relationships between



the investigated constructs. Further investigation is needed to explore the role of psychological preoccupation with private matters during work time in the context of WTC and employee well-being.

**Vieten et al. 2022.**

**International Journal of Environmental Research and Public Health**, vol. 19, no. 6.

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**Keywords:** Germany; autonomy; flexible working hours; national survey; occupational health; work–family conflict.

**Evidence Level:** 4B

**Link:** <https://www.mdpi.com/1660-4601/19/6/3487>

### **Evaluation of employee occupational stress by estimating the loss of human capital in Japan**

**Background:** Human capital is thought to be a crucial factor that drives economic growth. This study aims to understand the evaluation of the loss of human capital caused by employees' occupational stress.

**Methods:** In total, 1,021,178 observations for employee occupational stress were collected from 390 companies from 2017 to 2019 in Japan. The original cross-sectional survey contains 11,167 employees with occupational stress and their socioeconomic information in 2015. The relationship between stress and annual income is estimated with polynomial regression, and accumulated human capital loss is estimated. Matching approaches are applied for corporate human capital loss. **Results:** The negative association between annual income and employee stress is derived, which indicates that the worse the employees' stress is, the greater the human capital losses. Importantly, we confirmed that most employees have human capital loss, and on average, for male employees aged 25, the accumulated human capital loss will reach approximately \$0.6 million USD by retirement. **Conclusion:** For corporations, human capital loss is highly correlated with the number of employees, suggesting that reducing the occupational stress of employees can lead to greater corporate performance.

**Piao et al. 2022.**

**BMC Public Health**, vol. 22, no. 1.

**User License:** *Creative Commons Attribution (CC BY 4.0)* (<https://creativecommons.org/licenses/by/4.0/>)

**Keywords:** Employee; human capital; Japan; psychological well-being; stress.

**Evidence Level:** 4B

**Link:** <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-12751-7>

### **Work-related stress of work from home with housemates based on residential types**

**Background:** The COVID-19 pandemic has had a significant impact on work environments. Many workers have been requested or instructed to work from home (WFH). **Methods:** This study aimed to clarify the work-related stress of WFH regarding housemates based on residential types during the COVID-19 pandemic. We conducted a web-based questionnaire survey of 500 workers living with housemates in Osaka Prefecture. The WFH environments were analyzed on the basis of high-stress workers (HSWs), which accounted for 17.4% of all subjects, according to three major types of residences in Japan. **Results:** The main finding is that HSWs with housemates had problems related to noise regardless of the type of residence. **Discussion and Conclusion:** This study of workers living with housemates in an urban area contrasts with the findings of preceding study, which found that satisfaction with noise in the environment was higher at home than in the office. HSWs in detached houses and condominium apartments had problems with the levels of noise created by their housemates. The residents living in these types of residences were found to be relatively older, thus potentially having older children who would require a certain level of privacy. WFH workers with insufficient privacy were unable to adapt to WFH environments and suffered from high stress.

**Natomi et al. 2022.**

**International Journal of Environmental Research and Public Health**, vol. 19, no. 5.

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**Keywords:** COVID-19; built environment; housemate; mental health; noise; privacy; remote work; telework; the Brief Job Stress Questionnaire (BJSQ); work–life boundary.

**Evidence Level:** 5B

**Link:** <https://www.mdpi.com/1660-4601/19/5/3060>

### **Profiling office workers based on their self-reported preferences of indoor environmental quality and psychosocial comfort at their workplace during COVID-19**

**Background:** Due to the COVID-19 pandemic, a large number of office workers were required to conduct their work from home. Little is known about the indoor environmental quality (IEQ) preferences and psychosocial comfort preferences of staff working from home. **Methods:** Therefore this study aimed to cluster office workers working at home based on their self-reported preferences for IEQ and psychosocial comfort at their most used workspace and to identify these preferences and needs of workers during the COVID-19 pandemic. **Results:** A questionnaire was administered to employees of ten offices in the Netherlands, and the 502 respondents were clustered with two models by using TwoStep cluster analysis. The first model was based on variables related to IEQ preferences, while the second was to psychosocial comfort preferences. The analysis revealed four IEQ clusters and six psychosocial comfort clusters. **Discussion and Conclusion:** Comparison of these results with other similar studies proposed that the prevalence of anxiety, depression, migraine, and rhinitis, increased for this population during the work-from-home period of the pandemic. Further results suggest that both IEQ and psychosocial comfort preferences are situation- and gender-dependent.

**Ortiz et al. 2022.**

**Building and Environment, vol. 1.**

**User License:** Elsevier Connect COVID-19 resource centre

**Keywords:** COVID-19; health and comfort; preferences and needs; workplace.

**Evidence Level:** 5B

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8719922/>

### **Exploring the criteria and factors affecting firefighters' resilience: A qualitative study**

**Background:** Firefighters are exposed to high levels of occupational risk factors, such as safety risks, chemical, ergonomic, and physical hazards that may jeopardize their lives. To overcome these hazards, firefighters must be physically, mentally, and personally fit to work. This study aimed to explore the criteria and factors affecting firefighters' resilience based on stakeholders' experiences. **Methods:** This qualitative study was carried out using conventional content analysis. In total, 21 face-to-face interviews were conducted by firefighters who were experienced in the field. The interviews were carried out from July 2019 to January 2020. The data were collected using 3 unstructured interviews and then resumed by 18 semi-structured interviews. Data analysis was done using Graneheim method. **Results:** The participants had more than 5 years of experience in the field of search and rescue. The extracted codes through data analysis were classified into 3 main categories (individual, organizational, and social factors), 9 sub-categories (mental, physical, occupational, managerial, colleagues-related, equipment-related, environmental, community-related, and family-related factors), as well as 19 sub-sub-categories and 570 codes. **Conclusion:** Firefighters' personality, physical condition, behavior and psychological characteristics can affect their resilience along with organizational and management factors that play significant role in people's safety. Developing a tool for assessing resilience can help decision makers to have a real depict of firefighters' job qualifications.

**Heydari et al. 2022.**

**Chinese Journal of Traumatology, vol. 25, no. 2.**

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**Keywords:** Firefighters; Qualitative research; Resilience; Safety.

**Evidence Level:** 5A

**Link:** <https://www.sciencedirect.com/science/article/pii/S1008127521000961?via%3Dihub>

### **The effect of the imacoco care psychoeducation website on improving psychological distress among workers during the COVID-19 pandemic: Randomized controlled trial**

**Background:** The prolonged COVID-19 pandemic has affected mental health among workers. Psychoeducational intervention via a website could be effective for primary prevention of mental illness among workers in the current COVID-19 pandemic. **Objective:** The aim of this randomized controlled trial is to examine the effect of a newly developed online psychoeducational website named Imacoco Care on

reducing psychological distress and fear about COVID-19 infection among workers. **Methods:** Participants in the study were recruited from registered members of a web survey company in Japan. Participants who fulfilled the eligibility criteria were randomly allocated to the intervention or control group. Participants in the intervention group were invited to access the Imacoco Care program within a month after the baseline survey. The Kessler Psychological Distress Scale (K6) and the Fear of COVID-19 Scale (FCV-19S) scores were obtained at baseline and at 1- and 3-month follow-ups. **Results:** A total of 1200 workers were randomly allocated to the intervention and control groups (n=600 [50%] per group). The Imacoco Care intervention group showed a significant favorable effect on K6 scores (P=.03) with a small effect size (ES; Cohen d=-0.14) and an adverse effect on FCV-19S scores (P=.01) with a small ES (Cohen d=0.16) at 3-month follow-up. In the per protocol analysis (including only participants who had read the Imacoco Care content at least 1 time), the Imacoco Care intervention group also showed a significant favorable effect on reducing K6 scores (P=.03), while an adverse effect on FCV-19S scores was not significant (P=.06) in the intervention group at 3-month follow-up. **Conclusions:** A web-based psychoeducation approach may be effective for improving psychological distress among workers; however, it may be important not only to distribute information but also to encourage active engagement with the content of the program to prevent adverse effects of psychoeducational intervention. **Trial registration:** University Hospital Medical Information Network Clinical Trials Registry (UMIN-CTR) UMIN000042556; [https://upload.umin.ac.jp/cgi-open-bin/ctr\\_e/ctr\\_view.cgi?recptno=R000048548](https://upload.umin.ac.jp/cgi-open-bin/ctr_e/ctr_view.cgi?recptno=R000048548).

**Imamura et al. 2022.**

**JMIR Formative Research, vol. 6, no. 3.**

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**Keywords:** COVID-19; digital health; education; health intervention; internet-based intervention; mental health; occupational groups; psychoeducation; psychological distress.

**Evidence Level:** 2B

**Link:** <https://formative.jmir.org/2022/3/e33883/>

## Enabling Healthy and Safe Workplaces

### Health and Wellbeing

*This month, studies explore the health and wellbeing across a range of employment sectors, including the transport, healthcare and municipal sectors. Factors such as smoking, dietary habits, employment status, computer use and Covid-19, and their effect on health and wellbeing are explored.*

#### **The physical and mental health of Australian truck drivers: a national cross-sectional study**

**Background:** The negative health consequences of truck driving are well documented. However, despite the distinct occupational challenges between long- and short-haul driving, limited research has been conducted on how the health profile of these drivers differ. The aims of this study were to characterise the physical and mental health of Australian truck drivers overall, and to identify any differences in factors influencing the health profile of long-haul compared to short-haul drivers. **Design, setting, and participants:** In this cross-sectional study, 1390 Australian truck drivers completed an online survey between August 2019 and May 2020. Questions included validated measures of psychological distress, general health, work ability and health-related quality-of-life. Participants driving 500 km or more per day were categorised as long-haul and those driving less than 500 km as short-haul. **Results:** The majority of survey respondents were classified as either overweight (25.2%) or obese (54.3%). Three in ten reported three or more chronic health conditions (29.5%) and poor general health (29.9%). The most commonly diagnosed conditions were back problems (34.5%), high blood pressure (25.8%) and mental health problems (19.4%). Chronic pain was reported by 44% of drivers. Half of drivers reported low levels of psychological distress (50.0%), whereas 13.3 and 36.7% experienced severe or moderate level of psychological distress respectively. There were a small number of differences between the health of long- and short-haul drivers. A higher proportion of short-haul drivers reported severe psychological distress compared to long-haul drivers (15.2% vs 10.4%,  $\chi^2 = 8.8$ , 0.012). Long-haul drivers were more likely to be obese (63.0% vs 50.9%,  $\chi^2 = 19.8$ , < 0.001) and report pain lasting over a year (40.0% vs 31.5%,  $\chi^2 = 12.3$ ,

0.006). Having more than one diagnosed chronic condition was associated with poor mental and physical health outcomes in both long- and short-haul drivers. **Conclusion:** Australian truck drivers report a high prevalence of multiple physical and mental health problems. Strategies focused on improving diet, exercise and preventing chronic conditions and psychological distress, that can also be implemented within the unique occupational environment of trucking are needed to help improve driver health. Further research is needed to explore risk and protective factors that specifically affect health in both short-haul and long-haul drivers.

van Vreden et al. 2022.

**BMC Public Health**, vol. 22, no. 1.

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**Keywords:** Mental health; physical health; truck drivers.

**Evidence Level:** 4A

**Link:** <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-12850-5>

### **A systematic review of trucking food, physical activity, and tobacco environments and tractor-trailer drivers' related patterns and practices in the United States and Canada, 1993-2021**

**Background:** Truckers in the United States (U.S.) and Canada are at high risk for noncommunicable disease. Although trucking built environments have been highlighted for intervention, no systematic review has assessed aspects of trucking environments that may influence food, physical activity (PA), and smoking patterns/practices. The purpose of this systematic review was to characterize the state of the science on trucking food, PA, and tobacco environments and to examine truckers' food, PA, and tobacco patterns/practices. **Methods:** The Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines were used. Five databases were selected for searching in April 2020 and 2021 using key terms constructed by a librarian. Peer-reviewed research with data about U.S. and Canadian truckers' (i.e., drivers operating 18-wheelers or tractor trailers) food, PA, and/or tobacco environments and related patterns/practices were included. Quality was assessed using the Mixed Method Appraisal Tool. **Results:** Thirty-eight studies were identified. Results included data from at least 16,600 truckers and 282 trucking settings in the U.S. ( $n = 32$ ) and Canada ( $n = 6$ ). Most studies were classified as quantitative descriptive and of poor quality (average score 3 of 7). The few studies ( $n = 4$ ) that measured trucking food and PA environments characterized trucking sites as poor. Fifteen (47%) presented data about truckers' perceptions of food or PA environments and highlighted prominent environmental barriers. **Conclusion:** Truckers' food, PA, and smoking patterns and practices suggested poor diet quality, sedentary practices, and a high prevalence of smoking. The science of trucking food, PA, and tobacco environments is underdeveloped and requires much more focus using validated measures.

Houghtaling et al. 2022.

**Preventable Medicine Reports**, vol. 26.

**User License:** *Creative Commons Attribution -NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0)* (<https://creativecommons.org/licenses/by-nc-nd/4.0/>)

**Keywords:** Body mass index; food choices index; food environment, the healthy trucking worksites audit instrument; nutrition attitude survey; occupational health; physical activity; supplemental nutrition assistance program; truck drivers.

**Evidence Level:** 1B

**Link:** <https://www.sciencedirect.com/science/article/pii/S2211335522000675?via%3Dihub>

### **The relationship between dietary habits and work engagement among female Finnish municipal employees**

**Background:** Work engagement reflects work-related well-being. It is positively associated with health, life satisfaction, work efficiency, income level, and occupational prospects. However, little is known about the relationship between work engagement and diet. **Methods:** A cross-sectional study was conducted among female Finnish municipal employees ( $n = 630$ ) in 2015. Work engagement was assessed using the Utrecht Work Engagement Index. The consumption of healthy and unhealthy food items was determined using a food frequency questionnaire. Sociodemographic factors, health behaviors, depressive and anxiety symptoms were assessed with self-administrated questionnaires. **Results:** Work engagement had a positive

relationship with the daily consumption of healthy food items. This association remained significant even after adjusting for age, education years, financial situation, and physical activity. The frequency of consuming unhealthy food items showed no relationship with work engagement. Anxiety and depressive symptoms decreased linearly with the greater consumption of healthy foods. **Conclusion:** Frequent consumption of healthy food items is associated with higher work engagement, irrespective of the consumption of unhealthy nutrients. These results encourage health care professionals to recommend healthy food items instead of forbidding unhealthy food, as well as employers to support healthy dietary habits among employees.

**Virtanen et al. 2022.**

**Nutrients, vol. 14, no. 6.**

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**Keywords:** Mental health; nutrition; work engagement.

**Evidence Level:** 4B

**Link:** <https://www.mdpi.com/2072-6643/14/6/1267>

### **Changes in health among 45-64-year-old Dutch persons before, during and after becoming unemployed or employed: a seven year follow-up study**

**Background:** This study aimed to evaluate the extent to which physical and mental health and body mass index (BMI) changed before, during and after becoming unemployed or employed, and whether these associations differ across psychosocial and physical working conditions. **Methods:** Participants from seven waves (2010-2017) of the Dutch longitudinal Study on Transitions in Employment, Ability, and Motivation (STREAM) aged 45-64 years were included. STREAM provides information on physical and mental health, BMI and working conditions, and was enriched with monthly information on income components from Statistics Netherlands to define employment status during 2010-2017. Annual changes in physical and mental health (0-100 scales), and BMI (kg/m<sup>2</sup>) before, during and after becoming unemployed (N=13 279) and employed (N=1902) were estimated with generalized linear mixed-effect models. **Results:** Before employed persons became unemployed they had poorer health than continuously employed persons, which worsened in the period before becoming unemployed. During the year of becoming unemployed, physical [b=1.45, 95% confidence interval (CI) 0.89-2.01] and mental health (b=1.46, 95% CI 0.85-2.07) improved, in particular among persons with unfavorable working conditions. After becoming unemployed physical health deteriorated (b=-0.52, 95% CI -0.80- -0.24) and BMI (b=0.11, 95% CI 0.03-0.19) increased, but mental health improved (b=0.33, 95% CI 0.02-0.63). Unemployed persons had better health before entering employment than continuously unemployed persons. The health of persons who entered employment did not statistically significantly change before or during the year of the transition. After entering employment, physical health deteriorated and BMI increased. **Conclusions:** Maintaining a healthy workforce and limiting unfavorable working conditions may contribute to the prevention of unemployment and the promotion of re-integration.

**van de Ven et al. 2022.**

**Scandinavian Journal of Work, Environment and Health, vol. 8.**

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**Keywords:** Employment; physical health; BMI; body mass index; Dutch.

**Evidence Level:** 4B

**Link:** <https://www.sjweh.fi/article/4016>

### **Effect of time since smoking cessation on lung cancer incidence: An occupational cohort with 27 follow-up years**

**Background:** This special cohort reveals the effect of smoking cessation in occupational miners exposed to radon and arsenic. **Methods:** A total of 9,134 tin miners with at least 10 years of underground radon and arsenic exposure were enrolled beginning in 1992 and followed for up to 27 years. Detailed smoking information was collected at baseline, and information on smoking status was consecutively collected from 1992 to 1996. The Cox proportional hazards model was used to explore the relationship between time since smoking cessation and lung cancer. **Results:** A total of 1,324 lung cancer cases occurred in this cohort over 167,776 person-years of follow-up. Among populations exposed to radon and arsenic, miners after



quitting smoking for 10 years or more had almost halved their lung cancer risk [adjusted hazard ratio (HR) = 0.55, 95% CI: 0.38-0.79], compared with current smokers. Among miners after quitting smoking for 5 years or more, lung cancer incidence approximately halved (HR = 0.52, 95% CI: 0.30-0.92) for squamous cell lung carcinoma, while it showed no significant decline for adenocarcinoma (HR = 0.79, 95% CI: 0.34-1.85).

**Conclusion:** Smoking cessation for 10 years or more halved lung cancer incidence among miners exposed to radon and arsenic, and the benefit was more pronounced among squamous cell lung carcinoma.

**Su et al. 2022.**

**Frontiers in Oncology, vol. 1.**

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**Keywords:** Arsenic; cohort; lung cancer; radon; smoking cessation.

**Evidence Level:** 4A

**Link:** <https://www.frontiersin.org/articles/10.3389/fonc.2022.817045/full>

### **Impact of workplace smoke-free policy on secondhand smoke exposure from cigarettes and exposure to secondhand heated tobacco product aerosol during COVID-19 pandemic in Japan: the JACSIS 2020 study**

**Background:** Promoting smoke-free policies is a key intervention for reducing secondhand smoke (SHS) exposure. During the COVID-19 pandemic in Japan, many indoor smoking spaces in workplaces were closed. This study aimed to reveal the association between a workplace smoke-free policy and SHS exposure among non-smoking employees, distinguishing between SHS exposure from cigarettes and exposure to secondhand heated tobacco product (HTP) aerosol, which have recently become popular in Japan. **Methods:** We used data from the Japan COVID-19 and Society Internet Survey conducted in August-September 2020. Participants: Among the 25 482 eligible respondents, 8196 non-smoking employees were analysed. Primary outcome measure: Multivariable logistic regression models were used to examine the impact of smoke-free policies in the workplace. **Results:** Compared with complete smoking bans, the ORs and 95% CIs for workplace SHS exposure at least once a week from cigarettes were 2.06 (95% CI: 1.60 to 2.65) for partial bans with no longer available smoking spaces, 1.92 (95% CI: 1.63 to 2.25) for partial smoking bans with still available smoking spaces and 5.33 (95% CI: 4.10 to 6.93) for no smoking bans. The corresponding ORs and 95% CIs for exposure to secondhand HTP aerosol were 4.15 (95% CI: 3.22 to 5.34), 2.24 (95% CI: 1.86 to 2.71) and 3.88 (95% CI: 2.86 to 5.26), respectively. **Conclusions:** The effect of partial bans was limited, and temporary closure of smoking spaces might contribute to increased exposure to secondhand HTP aerosol. Complete smoking bans in the workplace were reaffirmed to be the best way to reduce SHS exposure from cigarettes and exposure to secondhand HTP aerosol.

**Takenobu et al. 2022.**

**BMJ Open, vol. 12, no. 3.**

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**Keywords:** COVID-19; health policy; public health.

**Evidence Level:** 4B

**Link:** <https://bmjopen.bmj.com/content/12/3/e056891.long>

### **Smoking awareness and intention to quit smoking in smoking female workers: Secondary data analysis**

**Background:** Although the smoking rate among women has been continuously increasing recently, it is very difficult to explore the actual situation because of negative social views. This study aimed to analyze the effects of smoking awareness and living environment on the intention to quit smoking among female smokers. **Methods:** After receiving approval from the Research Ethics Committee in September 2021, secondary data analysis was performed for this study. A total of 378 working women who smoked were included in this study. The mean age was 34.4 years. **Results:** The results showed that women living alone had significantly lower intentions to quit smoking, and women with experience in smoking cessation education had significantly higher intentions to quit smoking. In addition, it was found that the group having awareness of smoking cessation policy and smoking cessation treatment had high intention to quit smoking. **Discussion and Conclusion:** As a result of the analysis of decision trees using data mining techniques, the strongest predictor of the intention of female workers who smoke to quit smoking was their perception of smoking cessation policies. In addition, it was found that the state's policy support was important in that the group with the highest intention to quit smoking was the one with high awareness of

both the smoking cessation policy and smoking cessation treatment. Finally, the risk group with the lowest intention to quit smoking was the group with low awareness of the anti-smoking policy, living alone, and having low awareness of the harmfulness of cigarettes. The importance of establishing policies for this vulnerable group, smoking cessation policies and treatment of female smokers, and improving awareness of the harmful effects of tobacco are discussed.

**Lee et al. 2022.**

**International Journal of Environmental Research and Public Health**, vol. 19, no. 5.

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**Keywords:** Awareness; decision making; female; intention; smoke-free policy; smokers; smoking cessation.

**Evidence Level:** 5A

**Link:** <https://www.mdpi.com/1660-4601/19/5/2841>

### **Tea consumption is associated with an increased risk of hyperuricemia in an occupational population in Guangdong, China**

**Background:** Chronic hyperuricemia leads to long-term deposition of monosodium urate crystals that may damage the joint structure and affect quality of life. Although hyperuricemia prevalence varies, most studies indicate increased cases of hyperuricemia worldwide. The relationship between hyperuricemia and tea consumption is uncertain. This cross-sectional study investigated the effect of tea consumption on the risk of hyperuricemia in the working population in Guangdong, China. **Patients and methods:** Data on weight, height, blood pressure, laboratory test results, and health questionnaire responses of 7644 adults aged  $\geq 18$  years were obtained from the health examinee dataset of Nanfang Hospital. The characteristics of subjects with and without hyperuricemia were compared using *t*-tests or non-parametric Mann-Whitney *U*-tests for continuous variables and chi-square tests for categorical variables. Relationships between hyperuricemia and participant characteristics (sex, age, education level, smoking history, alcohol consumption, hypertension, body mass index, tea consumption, and other dietary factors) were examined using univariate and multivariate logistic regression models to identify independent risk factors for hyperuricemia. **Results:** Tea consumption was associated with a higher risk of hyperuricemia in the crude model (odds ratio [OR] 1.74, 95% confidence interval [CI] 1.48-2.05, once a month through twice a week vs never,  $P < 0.001$ ; OR 2.44, 95% CI 2.07-2.89,  $\geq 3$  times a week vs never,  $P < 0.001$ ). The adjusted OR for hyperuricemia was 1.30 (95% CI 1.08-1.56,  $P = 0.006$ ) in participants who consumed tea once a month through twice a week and 1.35 (95% CI 1.11-1.64,  $P = 0.003$ ) in those who consumed tea  $\geq 3$  times a week compared with the "never" reference group after adjusting for sociodemographic factors, anthropometric and biochemical indices, and dietary factors. This relationship remained significant in men but not women in subgroup analysis. **Conclusion:** Tea consumption is an independent risk factor for hyperuricemia and is more pronounced in men than women.

**Li et al. 2022.**

**International Journal of General Medicine**, vol. 10.

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**Keywords:** Chinese working population; hyperuricemia; risk factor; tea consumption.

**Evidence Level:** 5B

**Link:** <https://www.dovepress.com/tea-consumption-is-associated-with-an-increased-risk-of-hyperuricemia-peer-reviewed-fulltext-article-IJGM>

### **Breakfast consumption frequency is associated with dyslipidemia: a retrospective cohort study of a working population**

**Background:** Dyslipidemia is a significant contributor to cardiovascular and cerebrovascular diseases. Research on the relationship between breakfast consumption frequency and dyslipidemia in the working population is lacking. Therefore, we aimed to investigate this relationship based on a retrospective cohort study of a large working population in China. **Methods:** This retrospective cohort study used data from the physical examinations and questionnaire survey of working participants at Nanfang Hospital from January 20, 2015 to October 16, 2020. Univariate and multivariate analyses were conducted to explore the relationship between breakfast consumption frequency and dyslipidemia in this working population ( $n =$

7644). **Results:** The prevalence of dyslipidemia among the participants was 26.4%. The univariate logistic regression test showed that the breakfast consumption frequency was inversely correlated with dyslipidemia. After adjusting for multiple factors, such as sex, age, body mass index, hypertension, hyperuricaemia, diabetes, smoking status, alcohol consumption, education level, marital status, long-term exposure to kitchen oil fumes, attending business dinners, and sleep time, it was found that breakfast consumption remained inversely associated with dyslipidaemia. The odds ratio for daily breakfast consumption was 0.466 (95% confidence interval 0.283-0.770,  $P = 0.003$ ). After adjusting for confounding factors, we found that the higher the frequency of breakfast consumption, the lower the odds ratios for hypertriglyceridaemia. **Conclusions:** This study demonstrated that breakfast consumption frequency was inversely correlated with dyslipidemia. The higher the frequency of breakfast, the lower the risk of hypertriglyceridaemia. This study provides a basis on which dietary suggestions for the working population and lifestyle guidance for patients with a clinical need to prevent dyslipidemia can be made.

**Li et al. 2022.**

**Lipids in Health and Disease, vol. 21, no. 1.**

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**Keywords:** Breakfast; diet; Dyslipidemia; Hypertriglyceridaemia; regression analysis; working population.

**Evidence Level:** 4B

**Link:** <https://lipidworld.biomedcentral.com/articles/10.1186/s12944-022-01641-x>

### **Coronavirus disease (COVID-19) pandemic: The psychological well-being in a cohort of workers of a multinational company**

**Background:** The aim of the present study was to evaluate the psychological well-being (PWB) during the coronavirus disease (COVID-19) pandemic in workers of a multinational company. **Methods:** Employees (aged  $\geq 18$  years) were recruited from Latin American, North American, New Zealand, and European sites of a multinational company operative during all the pandemic period. The self-reported Psychological General Well-Being Index was used to assess the global PWB and the effects on six subdomains: anxiety, depressed mood, positive well-being, self-control, general health, and vitality. The influencing role of age, gender, geographical location, COVID-19 epidemiology, and restrictive measures adopted to control the pandemic was explored. **Results:** A total of 1335 workers completed the survey. The aggregate median PWB global score was in a positive range, with significantly better outcomes detected in the Mexican and Colombian Latin American sites compared with the other worldwide countries ( $p < 0.001$ ). Among the European locations, a significantly higher PWB score was determined in Spain compared with the German and French sites ( $p < 0.05$ ). Comparable geographical trends were demonstrated for all the PWB subdomains. Male workers had a significantly better PWB compared with females ( $p < 0.05$ ), whereas a negative correlation emerged with aging ( $p = 0.01$ ). COVID-19 epidemiology and pandemic control measures had no clear effects on PWB. **Conclusion:** Monitoring PWB and the impact of individual and pandemic-related variables may be helpful to clarify the mental health effects of pandemic, define targeted psychological-supporting measures, also in the workplace, to face such a complex situation in a more constructive way.

**Lovreglio et al. 2022.**

**Safety and Health at Work, vol. 13, no. 1.**

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**Keywords:** Conditional variables; mental health; resilience; SARS-CoV-2 infection; workplace.

**Evidence Level:** 4B

**Link:** <https://www.sciencedirect.com/science/article/pii/S2093791121000858?via%3Dihub>

### **Changes in work and health of Australians during the COVID-19 pandemic: a longitudinal cohort study**

**Background:** Engagement in work is an important determinant of health. In response to the COVID-19 pandemic, public health measures imposed to reduce viral transmission resulted in large-scale loss of work during the early stages of the pandemic, contributing to declined mental and physical health. As the pandemic unfolded, the Australian economy began to recover and some people could return to work, whilst localised lockdowns resulted in further loss of work for others. The long-term health effects of work loss remain unexplored within the COVID-19 pandemic context, in addition to whether any health effects

are persistent upon returning to work. **Methods:** A prospective longitudinal cohort study of 2603 participants across Australia monitored changes in health and work between March and December 2020, with participants completing surveys at baseline and 1, 3 and 6 months later. Outcomes described psychological distress, and mental and physical health. Linear mixed regression models examined associations between changes in health and experiences of work loss, and return to work, over time.

**Results:** Losing work during the early stages of the pandemic was associated with long-term poorer mental health, which began to recover over time as some returned to work. Physical health deteriorated over time, greater for people not working at baseline. Being out of work was associated with poorer mental health, but better physical health. These effects were larger for people that had recently lost work than for people with sustained work loss, and retaining employment played a protective role. Generally, returning to work resulted in poorer physical health and improvements in mental health, although this depended on the broader context of changes in work. **Conclusions:** Work cessation during the pandemic led to poor health outcomes and had long-lasting effects. Returning to work benefits mental health but may reduce physical activity in the short-term. We encourage the provision of accessible mental health supports and services immediately following loss of work, and for people with prolonged forms of work loss.

**Griffiths et al. 2022.**

**BMC Public Health, vol. 22, no. 1.**

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**Keywords:** COVID-19; longitudinal studies; mental health; occupational health.

**Evidence Level:** 4A

**Link:** <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-12897-4>

### **Recurrence of asymptomatic COVID-19 after recovery among healthcare workers**

**Background and Methods:** We describe five healthcare workers (HCWs) with a recurrence of asymptomatic SARS-CoV-2 infection at Siloam Teaching Hospital, Indonesia. **Results:** All cases involved nurses, with an average age of 27 years. The RT-PCR assay confirmed the first and second infection episodes. All cases showed negative RT-PCR results in the period between two infection episodes. The median interval time between two infection episodes was 123 days, ranging from 92 to 158 days. The clinical outcomes for all cases were favourable, with no mortality observed among study cases. **Conclusion:** Further studies will be required to understand the true nature of this phenomenon.

**Cucunwangsih et al. 2022.**

**Case Reports in Infectious Diseases, vol. 19.**

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**Keywords:** COVID-19; healthcare workers; asymptomatic.

**Evidence Level:** 5B

**Link:** <https://www.hindawi.com/journals/criid/2022/8787867/>

### **Put your feet up: The impact of personality traits, job pressure, and social support on the need for recovery after work**

**Background:** The need for recovery after work (NFR) is an important warning of work-related fatigue. NFR is linked to prolonged work-related efforts and depletion of resources, creating a need for temporary respite from work demands. The aim of the current study was to investigate the relationships between NFR and the five-factor model (FFM), comprising the personality traits of emotional stability (ES), extraversion (E), agreeableness (A), conscientiousness (C), and openness to experience (O). Perceived job pressure and perceived social support were included as mediators. **Methods:** The study was conducted using structural equation modelling (SEM) on cross-sectional data from a sample of 681 participants from several work sectors (N females = 376, N males = 305; M age = 46.9 years; SD = 11.1). **Results:** The results showed that NFR was affected both directly and indirectly by FFM traits. High ES and high O contributed directly to reduced and increased NFR, respectively. High perceived social support contributed to reduced NFR, while high perceived job pressure contributed to increased NFR. High ES contributed indirectly to reduced NFR through perceived job pressure and social support, high O contributed indirectly to increased NFR through perceived social support, and high E contributed indirectly to increased NFR through perceived job pressure. A and C were not related to NFR. **Conclusion:** The findings demonstrate that personality traits,

especially ES, are firmly related to NFR and highlight the importance of incorporating personality factors into studies of work environmental factors on NFR.

**Fostervold et al. 2022.**

**Current Psychology**, vol.14 , no. 1-17.

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**Keywords:** Five-factor model; job pressure; need for recovery; social support; work-related fatigue.

**Evidence Level:** 4A

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8918590/>

### **Knowledge and awareness of COVID-19 epidemic preparedness and response among healthcare workers in Makkah city**

**Background:** This study determined and examined the knowledge and awareness of COVID-19 pandemic preparedness and response measures by health care workers (HCWs) in Makkah city. **Methods:** This descriptive study used a quantitative method with a cross-sectional design. A survey (questionnaire) collected data from 251 HCWs working in 10 hospitals and 80 health care centers. **Results:** The total score for the knowledge level was high (range: 50-76, mean  $\pm$  SD = 65.370  $\pm$  4.805). There was a relationship between the participants' workplace and education levels to the nature of the disease ( $p = 0.009^*$ ,  $0.037^*$ , respectively). Job descriptions were related to the transmission of the disease ( $p = 0.003^*$ ). The participants' age groups and years of experience were also associated with their actions in suspected, probable, and confirmed cases ( $p = 0.015^*$ ,  $0.03^*$ , respectively). The HCWs' knowledge of precautionary measures was not related to their demographic data, except for the education level shown ( $p = 0.037^*$ ).

**Discussion:** A similar level of knowledge and awareness was detected in Saudi Arabia in Riyadh and Al-Jouf, the UAE, Vietnam, and Uganda. Further study is recommended to measure the factors affecting HCWs' knowledge and awareness during an epidemic situation.

**Alrajhi et al. 2022.**

**Therapeutic Advances on Infectious Diseases**, vol. 9.

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**Keywords:** COVID-19; Makkah city; health care workers; knowledge; response.

**Evidence Level:** 4B

**Link:** <https://journals.sagepub.com/doi/full/10.1177/20499361221079452>

### **Computer vision syndrome and predictors among computer users in Ethiopia: a systematic review and meta-analysis**

**Background:** A computer is one of the most widely used office tools. The leading occupational health problem of the twenty-first century is computer vision syndrome (CVS). Research findings across Ethiopia on the magnitude and predictors of CVS among computer users are highly variable and inconsistent. Therefore, this study aimed to estimate the overall prevalence of CVS and its predictors among computer users in Ethiopia. **Methods:** We searched articles in all databases and other sources. Cochrane Q test statistics and  $I^2$  tests were used. A random-effect meta-analysis model was used. In addition, the association between risk factors and CVS among computer users was examined. **Results:** Eight eligible studies were included. The pooled prevalence of CVS among computer users in Ethiopia was 73.21% (95% CI 70.32-76.11). Sub-group analysis by profession has shown that the highest prevalence of CVS was observed in bank employees [73.76% (95% CI 70.40-77.13)]. The most common reported symptoms of CVS were blurred vision (34.26%; 95% CI 22.08, 46.43). The previous history of eye disease (95% CI 2.30, 5.47), inappropriate sitting position (95% CI 1.76, 3.22), the frequent use of a computer (95% CI 2.04, 3.60), and using eyeglass/spectacles (95% CI 1.10, 3.91) were significantly associated with CVS among computer users in Ethiopia. **Conclusions:** According to this study, computer vision syndrome was high among computer users in Ethiopia. Computer vision syndrome (CVS) was significantly associated with a previous history of eye disease, inappropriate sitting position, frequent use of a computer, and the use of spectacles. Based on the findings, it is suggested that efforts be made to optimize computer exposure time. It is also worth noting that employees should be properly seated when using a computer. Furthermore, people with vision



problems should be extra cautious when using a computer. Finally, community awareness of the safety precautions that can be taken to reduce CVS is critical.

**Adane et al. 2022.**

**Tropical Medicine and Health, vol. 50, no. 1.**

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**Keywords:** Bankers; CVS; computer vision syndrome; employees; meta-analysis and ethiopia; secretaries; system review.

**Evidence Level:** 1A

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8943996/>

## Work Health and Safety

*This month, studies focus on the construction, mining and health care sectors, exploring the effect of factors such as psychological capital, unionisation, use of PPE and pregnancy on work health and safety.*

### The role of psychological capital and work engagement in enhancing construction workers' safety behavior

**Background:** Construction is one of the unsafe industrial sectors, causing a considerable amount of harm to its workforce and organizations globally. Only a handful of research evidence has been found evaluating individuals' cognitive and engagement-related constructs to improve occupational safety. Psychological Capital (PsyCap) can have a promising impact on construction workers' psychological health, possibly leading to positive performance. Limited studies have tested PsyCap and work engagement regarding safety specifically in the context of the construction industry, with non-harmonious findings. **Methods:** The proposed framework was assessed through the structural equation modeling (SEM) technique along with bootstrapping for mediation analysis. Responses were collected from different states of Malaysia from 345 construction workers. PsyCap dimensions (hope, efficacy, resilience, and optimism) were measured in connection with safety compliance and safety participation, with the mediating role of work engagement. **Results:** According to findings, hope, optimism, and work engagement have a positive and significant impact on safety compliance. Also, hope, self-efficacy, resilience, optimism, and work engagement have a positive and significant impact on safety participation. Further, self-efficacy and optimism both have a positive impact on work engagement. **Conclusions:** PsyCap can be a possible predictor for work engagement, which may enhance safety-related behavior. PsyCap should be treated as a multidimensional instrument to enhance occupational safety. In-depth deliberation is needed by the organization while applying PsyCap to enhance employees' work engagement as well as safety behavior. Practical interventions based on interactive training are proposed to enhance construction industry safety. Other industries can also adapt suitable dimension(s) of PsyCap to safety behavior improvements.

**Saleem et al. 2022.**

**Frontiers in Public Health, vol. 4.**

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**Keywords:** Construction industry; psychological capital; safety compliance; safety participation; safety performance; work engagement.

**Evidence Level:** 5B

**Link:** <https://www.frontiersin.org/articles/10.3389/fpubh.2022.810145/full>

### Perception of occupational and environmental risks and hazards among mineworkers: A psychometric paradigm approach

**Background:** This study aims to assess workers' perception of occupational and environmental risks and hazards using the psychometric paradigm. **Methods:** For this purpose, data were collected using survey questionnaires from 360 mineworkers recruited from mineral and sand mines. Respondents were asked to evaluate eight occupational and environmental risks and hazards on nine commonly used risk characteristics. **Results:** The principal component analysis revealed that two components, "Dreaded" and "Unknown", explained 73% percent of the total variance in workers' risk perception. The results also

showed that the risk of developing an occupational disease was perceived as the most dreaded and unknown type of risk, while landslide, occupational noise, and vibration exposure were the least familiar to the respondents. **Conclusion:** A practical implication of this research is that the results may offer an insight into the employees' perceptions of the hazards and risks associated with their working environment. This could help risk management develop and implement effective risk management and communications strategies.

**Alrawad et al. 2022.**

**International Journal of Environmental Research and Public Health**, vol. 19, no. 16.

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**Keywords:** Occupational and environmental risks; psychometric paradigm; risk communication; risk perceptions; safety and health; safety culture.

**Evidence Level:** 5A

**Link:** <https://www.mdpi.com/1660-4601/19/6/3371>

### **Unionisation and injury risk in construction: a replication study**

**Background:** To replicate, in a more recent time period, a previous cross-sectional study to estimate the association between unionisation and the risk of workers' compensation injury claims. **Methods:** The sampling frame was workers' compensation company account records in the industrial, commercial and institutional construction sector in the province of Ontario, Canada, 2012-2018. Company unionisation status was determined through linkage with records of unionised contractors. Outcomes were cumulative counts of workers' compensation injury claims, aggregated to company business. Risk ratios were estimated with multivariable negative binomial regression models. Models were also fit separately to lost-time claims stratified by company size. **Results:** Business unionisation was associated with a lower lost-time claim incidence (crude risk ratio, CRR=0.69, 95% CI 0.65 to 0.74); adjusted risk ratio, ARR=0.75, 95% CI 0.71 to 0.80). In subgroup analyses, the magnitude of the ARR declined as company size decreased and was not statistically significant for the smallest-sized companies of  $\leq 4$  full-time equivalent employees. Unionisation was associated (positively) with the incidence of no-lost-time claims in a crude model, but not in an adjusted one (CRR=1.80, 95% CI 1.71 to 1.89; ARR=1.04, 95% CI 0.98 to 1.09). **Conclusions:** Company unionisation was associated with a lower risk of lost-time workers' compensation injury claims, corroborating a similar study from an earlier time period. The protective effect of unionisation declined as company size decreased. In contrast to the previous study, a positive relationship between company unionisation and no-lost-time claim incidence was not found, due in part to a methodological refinement.

**Robson et al. 2022.**

**Occupational and Environmental Medicine**, vol. 79, no. 3.

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**Keywords:** Accidents; construction industry; epidemiology; wounds and injuries.

**Evidence Level:** 4B

**Link:** <https://oem.bmj.com/content/79/3/169.long>

### **Personal protective equipment and adverse dermatological reactions among healthcare workers: Survey observations from the COVID-19 pandemic**

**Background:** The pandemic of the 2019 novel coronavirus disease (COVID-19) has caused an unprecedented mobilization of the United States' healthcare workforce. In addition to working extended hours under increased duress, healthcare professionals (HCP) of all stations have been making use of various types of personal protective equipment (PPE) with greatly increased frequency and duration. Current data regarding adverse skin reactions as a possible consequence of PPE use are, particularly in the United States, largely insufficient for policy-makers to make informed decisions regarding daily PPE use among HCP. **Methods:** The research vehicle employed by this study is a cross-sectional 25-item survey distributed via email to workers currently employed by a five-hospital system in southcentral Kentucky. This survey was used to collect information from hospital workers of all professional roles about their experiences during the COVID-19 pandemic, focusing on reports of adverse dermatological reactions and associated risk factors. **Results:** Out of 879 respondents, 54.4% reported some type of skin irritation

reaction. Skin irritation was significantly more prevalent among medical and medical support staff than non-medical hospital workers, with the highest prevalence among Certified Nurse Assistant (CNAs). Among clinical workers, those in dedicated COVID-19 units reported the highest prevalence of adverse skin reaction. The most common complaint was dryness/scaling of the skin (306 out of 439, 69.7%), and the most common location was the facial cheeks (305 out of 516, 59.1%). Among those who reported skin irritation, the average self-reported severity of skin reaction (on a scale of 1-5) was  $2.00 \pm 0.05$ , and the mean total days of skin reaction per month was  $11.70 \pm 0.39$  days. Total days of irritation per month was found to be significantly related to "total days of PPE use per month," "hours of PPE use per day," "frequency of hand washing," and "use of disinfecting UV irradiation." Severity of skin reaction was found to be significantly related to "hours per day of PPE use," "consecutive days of PPE use," and "female sex." Clinical workers that put in the most face-to-face time with patients, and those in dedicated COVID-19 units, had the highest risk of adverse skin reaction. Overall, skin reactions were found to be mild, even in those hospital workers with the heaviest PPE use. **Conclusion:** Because the widespread and consistent use of facial masks in public settings has become a key tool in our protracted struggle with SARS-CoV-2, these findings may help to ameliorate concerns that everyday facial mask and/or other PPE usage contributes to significant dermatologic morbidity among both medical professionals and public citizens.

**Nguyen et al. 2022.**

**Medicine, vol. 101, no. 9.**

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**Keywords:** PPE; personal protective equipment; adverse reactions; dermatological; healthcare workers; COVID-19.

**Evidence Level:** 5B

**Link:** [https://journals.lww.com/md-journal/Fulltext/2022/03040/Personal\\_protective\\_equipment\\_and\\_adverse.44.aspx](https://journals.lww.com/md-journal/Fulltext/2022/03040/Personal_protective_equipment_and_adverse.44.aspx)

### **SARS-CoV-2 transmission risk upon return to work in RNA-positive healthcare workers**

**Background:** Healthcare workers (HCWs) are at risk for coronavirus disease 2019 (COVID-19) and for spreading Severe Acute Respiratory Syndrome Virus 2 (SARS-CoV-2) amongst colleagues and patients.

**Aim:** We aimed to study presence of SARS-CoV-2 RNA and possible onward transmission by HCWs upon return to work after COVID-19, and association with disease severity and development of antibodies over time.

**Methods:** Unvaccinated HCWs with positive SARS-CoV-2 RT-PCR were prospectively recruited. Data on symptoms was collected via telephone questionnaires on day 2, 7, 14 and 21 after positive test. Upon return to work, repeat SARS-CoV-2 RT-PCR was performed and serum was collected. Repeat sera were collected at week 4, 8, 12 and 16 to determine antibody dynamics over time. Phylogenetic analysis was conducted to investigate possible transmission events originating from HCW with a positive repeat RT-PCR.

**Findings:** Sixty-one (84.7%) participants with mild-moderate COVID-19 had a repeat SARS-CoV-2 PCR performed upon return to work (median 13 days post symptom onset), of which 30 (49.1%) were positive with a median cycle threshold (Ct) value of 29.2 (IQR 3.0). All HCWs developed antibodies against SARS-CoV-2. No significant differences in symptomatology and presence of antibodies were found between repeat RT-PCR-positive and -negative HCWs. Eleven direct colleagues of six participants with a repeat RT-PCR Ct-value <30 tested positive after the HCW returned to work. Phylogenetic and epidemiologic analysis did not indicate onward transmission through HCW who were SARS-CoV-2 RNA positive upon return to work. **Conclusions:** HCWs regularly return to work with substantial SARS-CoV-2 RNA loads. However, we found no evidence for subsequent in-hospital transmission.

**Kolodziej et al. 2022.**

**The Journal of Hospital Infection, vol. 11.**

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**Keywords:** COVID-19; healthcare worker; infectious disease transmission; SARS-CoV-2.

**Evidence Level:** 5A

**Link:** [https://www.journalofhospitalinfection.com/article/S0195-6701\(22\)00079-2/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(22)00079-2/fulltext)

### **Personal protective equipment training & lived experience for healthcare staff during COVID-19**

**Background:** To describe the lived experience of healthcare staff during the Coronavirus Disease 2019 (COVID-19) pandemic relating to the use of personal protective equipment (PPE) and investigate risks associated with PPE use, error mitigation and acceptability of mindfulness incorporation into PPE practice.

**Methods:** A qualitative human factors' study at two Irish hospitals occurred in late 2020. Data was collected by semi-structured interview and included role description, pre-COVID-19 PPE experience, the impact of COVID-19 on lived experience, risks associated with PPE use, contributory factors to errors, error mitigation strategies and acceptability of incorporating mindfulness into PPE practice. **Results:** Of 45 participants, 23 of whom were nursing staff (51%), 34 (76%) had previously worn PPE and 25 (56%) used a buddy system. COVID-19 lived experience impacted most on social life/home-work interface (n=36, 80%). Nineteen staff (42%) described mental health impacts. The most cited risk concerned 'knowledge of procedures' (n=18, 40%). Contributory factors to PPE errors included time (n=15, 43%) and staffing pressures (n=10, 29%). Mitigation interventions included training/education (n=12, 40%). The majority (n=35, 78%) supported mindfulness integration into PPE practice. **Conclusions:** PPE training should address healthcare staff lived experiences and consider incorporation of mindfulness and key organisational factors contributing to safety.

**Cahill et al. 2022.**

**Clinical Infection in Practice, vol. 23.**

**User License:** Elsevier Connect COVID-19 resource centre

**Keywords:** COVID-19; healthcare staff; human factors; lived experience; personal protective equipment.

**Evidence Level:** 5B

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8941945/>

### **Biomechanical and organisational constraints of pregnant women at work: definition of exposure levels using a consensus method (Delphi)**

**Background:** To identify the biomechanical and organisational constraints that influence pregnancy outcomes and define the exposure levels at which the risks for pregnancy become significant.

**Methods:** We applied a consensus method (Delphi) consisting of a literature review followed by expert opinions on exposure levels. The group of experts was made up of 12 people from different medical specialities and working in various structures in France. Outcome measures: The studied variables were: (1) exposure: night work/shift work, weekly hours at work, lifting of heavy loads, prolonged standing and multiple exposure and (2) pregnancy outcomes: prematurity, low birth weight and spontaneous miscarriages. **Results:** The consensus method resulted in the following recommendations. The time spent working must not exceed 40 hours/week; in the absence of a consensus on the level of exposure, night and/or shift work must be avoided; prolonged standing must not exceed 3 hours/day; lifting must be limited to carrying loads <11 kg, with a daily load <100 kg; multiple exposure must be avoided, in particular: vibration, night work/shift work, time spent working exceeding 40 hours/week, prolonged standing and lifting of heavy loads. **Conclusions:** These results could help the occupational physician to address the question of whether an exposed employee should remain at work, considering her individual characteristics (medical history, family situation, socioeconomic level, etc) in consultation with pregnancy specialists (obstetricians, midwives).

**Certenais et al. 2022.**

**BMJ Open, vol. 12, no. 3.**

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**Keywords:** Occupational & industrial medicine; preventive medicine; public health; reproductive medicine.

**Evidence Level:** 6A

**Link:** <https://bmjopen.bmj.com/content/12/3/e052474.long>

## Risk Assessment

### On an optimal testing strategy for workplace settings operating during the COVID-19 pandemic

**Background:** High quality daily testing for the presence of the SARS-CoV-2 in workplace settings has become part of the standard and mandatory protection measures implemented widely in response to the current pandemic. Such tests are often limited to a small fraction of the attending personnel due to cost considerations, limited availability and processing capabilities and the often cumbersome requirements of the test itself. A maximally efficient use of such an important and frequently scarce resource is clearly required. **Methods and Results:** We here present an optimal testing strategy which minimises the presence of pre-symptomatic and asymptomatic infected members of the population in a workplace setting, derived under a series of simplifying statistical assumptions. These assumptions however, retain many of the generalities of the problem and yield robust results, as verified through a number of numerical simulations. **Conclusion:** We show that reduction in overall infected-person-days, IPD, by significant percentages can be achieved, for fixed numbers of tests per day of 5% and 10% of the population, of 30% and 50% in the IPD numbers, respectively.

**Hernandez et al. 2022.**

**PLoS One, vol. 17, no. 3.**

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**Keywords:** COVID-19; testing; workplace; protection measures.

**Evidence Level:** 6A

**Link:** <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0264060>

## Chronic Health Issues

*This month, a range of chronic health conditions are explored including subclinical atherosclerosis, metabolic syndrome, chronic osteoarthritis, hand eczema, diabetes, bipolar disorder and persistent breathlessness.*

### Association between insomnia and subclinical atherosclerosis among Chinese steelworkers: a cross-sectional survey

**Background:** Insomnia is a common prevalent sleep disorder. Difficulty maintaining sleep or poor in quality in insomnia caused by disrupted or misaligned circadian rhythms may play an important role in the development of atherosclerosis. This study aimed to examine the association between insomnia and subclinical atherosclerosis in Chinese steelworkers. **Methods:** A total of 3240 subjects from a large enterprise located in northern China were included in this study. The Athens Insomnia Scale (AIS) was used to assess the status of insomnia. Subclinical atherosclerosis was evaluated using ultrasonographic measurements of carotid plaque. Multivariable logistic regression was used to identify association between insomnia and carotid atherosclerosis. **Results:** The overall prevalence of insomnia and carotid plaque were 35.3 and 31.7% in the study population. Compared with non-insomnia workers, significantly increased odds of carotid plaque were observed among insomnia workers after adjusting for potential confounders, odds ratio (OR) = 1.38, 95% confidence interval (CI): 1.17 to 1.63. Exposure to current shift work and insomnia simultaneously can significantly elevated the odds of carotid plaque. **Conclusion:** Insomnia is associated with elevated odds of carotid atherosclerosis in male steelworkers. Insomnia problems of workers should receive further attention in occupational worker health interventions.

**Wang et al. 2022.**

**Archives of Public Health, vol. 80, no. 1.**

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**Keywords:** Carotid plaque; insomnia; steelworker; subclinical atherosclerosis.

**Evidence Level:** 4B

**Link:** <https://archpublichealth.biomedcentral.com/articles/10.1186/s13690-022-00834-1>



### **Interaction between work and metabolic syndrome: A population-based cross-sectional study**

**Background:** Metabolic syndrome (MS) is a clinical condition and a relevant risk factor in the development of cardiovascular diseases; it occurs as a result of lifestyle factors, e.g., work. The aim of this research was to estimate the interaction between work and MS among primary health care (PHC) nursing professionals in the state of Bahia, Brazil. **Methods:** A sectional multicentered study carried out in 43 municipalities in Bahia, whose study population consisted of nursing professionals. The exposure variables were occupation, professional exhaustion, and working time, and the outcome variable was MS. Interaction measures based on the additivity criteria were verified by calculating the excess risks due to the interactions and according to the proportion of cases attributed to the interactions and the synergy index. **Results:** The global MS prevalence is 24.4%. There was a greater magnitude in the exposure group regarding the three investigated factors (average level occupation, professional exhaustion, and working time in PHC for more than 5 years), reaching an occurrence of 44.9% when compared to the prevalence of 13.1% in the non-exposure group (academic education, without professional burnout, and working time in PHC for up to 5 years).

**Conclusion:** The study's findings showed a synergistic interaction of work aspects for MS occurrence among PHC nursing professionals.

**Santana et al. 2022.**

**Healthcare (Basel), vol. 10, no. 3.**

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**Keywords:** Epidemiological studies; metabolic syndrome; primary health care; professional burnout; worker's health.

**Evidence Level:** 4B

**Link:** <https://www.mdpi.com/2227-9032/10/3/544>

### **Sick leave and costs in active workers with chronic osteoarthritis pain in Spain: Outcomes of the OPIOIDS Real World Study**

**Background:** To estimate the number of sick leave days and productivity costs in active workers with osteoarthritis (OA) who initiated opioid treatment for moderate/severe chronic pain in clinical practice in Spain. **Methods:** This is a secondary analysis of the longitudinal, retrospective OPIOIDS study, using electronic medical records (EMR) of patients aged  $\geq 18$  years, who started an opioid treatment for moderate/severe chronic OA pain between 2010 and 2015 after treatment failure with  $\geq 1$  first-line drugs (acetaminophen, metamizole and/or nonsteroidal anti-inflammatory drugs [NSAIDs]). The number of days of sick leave and productivity costs were analyzed during a follow-up period of 36 months. **Results:** A total of 5089 patients with moderate/severe chronic OA pain, aged 56.8 years (standard deviation [SD]: 4.6) (56.6% were female), were analyzed: 73.3% of them started a treatment with weak opioids and 26.7% of them were treated with strong opioids. At 36 months, adherence was 21.0% (strong opioids: 15.4%; weak opioids: 23.0%;  $p < 0.001$ ), and 77% of patients had at least one sick leave related with chronic OA pain, with an average of 93 days off work in all working patients (120.5 days in patients with sick leaves). Besides, 16.9% of the study population had sick leave periods that lasted at least 6 months. Pain reduction was modest (-1.2 points; -4.0%,  $p < 0.001$ ). The cost of sick leave was €2594 patient/year, and factors such as older age ( $\beta = 0.043$ ), female sex ( $\beta = 0.036$ ), comorbidities ( $\beta = 0.035$ ) and strong opioid use ( $\beta = 0.031$ ) were associated with higher productivity costs ( $p < 0.05$  in all associations). **Conclusion:** Active workers who started opioid treatment for moderate/severe chronic OA pain showed an increased frequency of sick leave and productivity cost, with a modest effect on pain relief. Older age, female sex, comorbidities, and strong opioids were associated with higher costs for society.

**Sicras-Mainar et al. 2022.**

**Open Access Rheumatology, vol. 15.**

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**Keywords:** Analgesics; arthritis; disability; observational study; sick days.

**Evidence Level:** 4B

**Link:** <https://www.dovepress.com/sick-leave-and-costs-in-active-workers-with-chronic-osteoarthritis-pain-peer-reviewed-fulltext-article-OARRR>

### **Worksite self-management program for workers with chronic health conditions improves worker engagement and retention, but not workplace function**

**Background:** An increasing number of workers in the US have chronic health conditions that limit their ability to work, and few worksite interventions have been tested to improve worker coping and problem solving at work. The purpose of this study was to evaluate a worksite-based health self-management program designed to improve workplace function among workers with chronic health conditions. **Methods:** We conducted a randomized, controlled trial of a worksite self-management program ("Manage at Work") (clinicaltrials.gov #NCT01978392) for workers with chronic health conditions (N = 119; 82% female, ages 20-69). Most workers were recruited from the health care or light manufacturing industry sectors. Workers attended a 5-session, facilitated psychoeducational program using concepts of health self-management, self-efficacy, ergonomics, and communication. Changes on outcomes of work engagement, work limitation, job satisfaction, work fatigue, work self-efficacy, days absent, and turnover intention at 6-month follow-up were compared to wait-list controls. **Results:** The most prevalent chronic health conditions were musculoskeletal pain, headaches, vision problems, gastrointestinal disorders, respiratory disorders, and mental health disorders. The self-management program showed greater improvement in work engagement and turnover intent at 6-month follow-up, but there was no evidence of a parallel reduction in perceived work limitation. Trends for improved outcomes of work self-efficacy, job satisfaction, and work fatigue in the intervention group did not reach statistical significance in a group x time interaction test. **Conclusions:** Offering a worksite self-management program to workers with chronic health conditions may be a feasible and beneficial strategy to engage and retain skilled workers who are risking disability. Clinical trial registration: Clinicaltrials.gov #NCT01978392.

**Shaw et al. 2022.**

**Journal of Occupational Rehabilitation, vol. 32, no. 1.**

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**Keywords:** Chronic health conditions; self-management; work engagement; work limitation; worksite intervention.

**Evidence Level:** 2A

**Link:** <https://link.springer.com/article/10.1007/s10926-021-09983-6>

### **Incidence rate of hand eczema in different occupations: A systematic review and meta-analysis**

**Background:** Hand eczema is a chronic disease that results in economic and psychosocial burdens. The aim of this study was to systematically review and assess the magnitude of the association between exposure related to occupations and the incidence rate of hand eczema. **Methods:** A systematic search in PubMed, EMBASE, CINAHL and Cochrane databases, from inception to September 2017, of full-text observational studies reporting incident cases of hand eczema during employment, and a supplementary search in PubMed to September 2020, were conducted. **Results** Among 2,417 screened abstracts, 15 studies fulfilled the inclusion criteria. Incidence rates were reported per 100 person-years. Based on the Newcastle-Ottawa Scale, 9 studies were good quality, 2 fair quality, and 4 poor quality. Hairdressers had a high incidence of hand eczema of 21.4 (95% confidence interval [CI] 15.3-27.4), as did nurses, 16.9 (95% CI 11.2-22.7), and metal workers, 12.4 (95% CI 3.5-21.3). Hairdressers were predominantly women, and metal worker were predominantly men. Office occupations had an incidence rate of hand eczema of 4.9 (95% CI 1.2-9.6). **Conclusions:** The high risk of hand eczema for hairdressers, nurses, and metal workers, should be considered by healthcare policymakers. Even occupations with low irritant profile, such as office workers, were at risk of developing hand eczema, and more occupations should be investigated regarding the related risk of developing hand eczema.

**Jamil et al. 2022.**

**Advances in Dermatology and Venereology, vol. 25.**

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**Keywords:** Hand eczema; epidemiology; occupation; incidence.

**Evidence Level:** 1A

**Link:** <https://medicaljournalssweden.se/actadv/article/view/360>

### **Occupations associated with diabetes complications: A nationwide-multicenter hospital-based case-control study**

**Background:** Investigating the risks of diabetes complications among inpatients with diabetes associated with longest-held and current occupations. **Method:** Using a Japanese nationwide, multicenter, hospital inpatient dataset (2005-2015), a matched case-control study with 39,550 inpatients with diabetes was conducted. We considered both the longest-held and current occupations of the study subjects.

**Result:** Diabetes complications such as retinopathy, nephropathy, neuropathy, and peripheral vascular complications occur more often in managers, sales workers, service workers, transportation workers, construction and mining workers and carrying, cleaning and packing workers. Among these occupations, particularly the service workers indicated consistently significant increased risks (OR = 1.36 (1.23-1.51)) in developing all the considered subtypes of diabetes complications, and the performed sensitivity analysis confirmed this conclusion. Moreover, among service workers, cooks, waiters, building service staff and other service workers were identified as having the highest risks in developing diabetes complications (ORs = 1.30 (1.12-1.51), 1.63 (1.36-1.95), 1.79 (1.21-2.67), and 2.05 (1.30-3.22), respectively). **Conclusions:** Our study's potential translational impact should lead to subsequent investigations on the causes connected to certain occupations of various diabetes complications and particularly to more carefully dealing with patients with diabetes who work in the identified occupational areas and their health risks.

**Nakazawa et al. 2022.**

**Diabetes Research and Clinical Practice, vol. 2.**

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**Keywords:** Case-control study; diabetes complications; inpatients; occupational health; socioeconomic status.

**Evidence Level:** 5B

**Link:** [https://www.diabetesresearchclinicalpractice.com/article/S0168-8227\(22\)00621-0/fulltext](https://www.diabetesresearchclinicalpractice.com/article/S0168-8227(22)00621-0/fulltext)

### **Headache in the workplace: Analysis of factors influencing headaches in terms of productivity and health**

**Background:** Headache is a very common condition that can have a significant impact on work. This study aimed to assess the prevalence of headaches and their impact on a sample of 1076 workers from 18 small companies operating in different sectors. **Method:** The workers who volunteered to participate were asked to fill in the Headache Impact Test-6 (HIT-6) and answer questions designed to assess stressful and traumatic factors potentially associated with headaches. The volunteers subsequently underwent a medical examination and tests for diagnosing metabolic syndrome. **Result:** Out of the 1044 workers who completed the questionnaire (participation rate = 97%), 509 (48.8%) reported suffering from headaches. In a multivariate logistic regression model, female gender, recent bereavement, intrusive leadership, and sleep problems were significantly associated with headaches. In univariate logistic regression models, headache intensity was associated with an increased risk of anxiety (OR 1.10; CI95% 1.09; 1.12) and depression (OR 1.09; CI95% 1.08; 1.11). Headache impact was also associated with the risk of metabolic syndrome (OR 1.02; CI95% 1.00, 1.04), obesity (OR 1.02, CI95% 1.01; 1.03), and reduced HDL cholesterol (OR 1.03; CI95% 1.01; 1.04). **Conclusions:** The impact of headache calls for intervention in the workplace not only to promote a prompt diagnosis of the different forms of headaches but also to improve work organization, leadership style, and the quality of sleep.

**Magnavita 2022.**

**International Journal of Environmental Research and Public Health, vol. 19, no. 6.**

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**Keywords:** Anxiety; depression; effort; headache disorders; leadership; medical surveillance; metabolic syndrome; reward; sleep; workplace health promotion.

**Evidence Level:** 5A

**Link:** <https://www.mdpi.com/1660-4601/19/6/3712>

### **Predictors of employment status for persons with bipolar disorder**

**Background:** Bipolar disorder is characterized by manic and depressive episodes and can be a lifetime condition. Bipolar disorder has been found to be associated with various types of disabilities, including low employment rate and high dependence on public aid. **Method:** The purpose of this study is to identify factors related to being employed for persons with bipolar disorder. Nine thousand eight hundred and eighty-six subjects with bipolar disorder were collected between July of 2012 and November of 2013 and retrieved from Taiwan national disability database on May of 2014. **Result:** The mean age of the sample is 45.41 (SD = 10.5), with 64% as female. Logistic regression was used to examine the log odds of the predictive variables on outcome of employment. A Receiver Operating Characteristics analysis was applied to locate the cutoff score of World Health Organization Disability Assessment Schedule 2.0 for being employed. All demographic variables were found to be significantly correlated with employment status among subjects. The Receiver Operating Characteristics results revealed that those subjects whose scores were below 33.57 had about a four-fold higher probability of being in employment than those whose scores were above 33.57. **Conclusions:** The result provides insights into future research effort and intervention design aimed at helping persons with bipolar disorder to obtain gainful employment.

**Lu et al. 2022.**

**International Journal of Environmental Research and Public Health**, vol. 19, no. 6.

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**Keywords:** ICF; mental illness; vocational rehabilitation.

**Evidence Level:** 4B

**Link:** <https://www.mdpi.com/1660-4601/19/6/3512>

### **Lower workforce participation is associated with more severe persisting breathlessness**

**Background:** Not being able to work has negative health, social and financial consequences. Persisting breathlessness is prevalent in working-aged people. Is it associated with lower workforce participation? This study, using the South Australian Health Omnibus, aimed to explore associations between paid workforce participation and persisting breathlessness intensity, and economic impacts on income in people of working age. **Methods:** This cross-sectional study conducted face-to-face interviews with a random sample of adults in South Australia (n = 8916). Questions included key demographic data, workforce participation and the presence and intensity of persisting breathlessness. Data from working-aged respondents (20-65 years of age) were standardised to the census for regression analyses. Work was coded to paid full- or part-time work or 'other'. Persisting breathlessness (more than three of the last six months) used the modified Medical Research Council breathlessness scale (aggregated to 0, 1, 2-4). Opportunity cost valuations compared annual income foregone by persisting breathlessness severity. **Results:** Of people interviewed, 6,608 were working-aged (49.9% male; 67.5% had post-secondary qualifications; 70.9% were in paid full- or part-time work; and 1.7% had mMRC score 2-4). Workforce participation dropped in working aged people with increasing breathlessness: mMRC 0, 70.6%; mMRC 1, 51.7%; mMRC 2-4, 20.3%. In the regression model, people with the most severe breathlessness were much less likely to work (OR 0.14; 95% CI 0.09, 0.22). Annual income foregone by people with persisting breathlessness was AU\$10.7 billion (AU\$9.1b for full-time and AU\$1.6b for part-time work; range AU\$5.9b, AU\$49.7b). **Conclusion:** Worsening persisting breathlessness is associated with lower workforce participation with direct financial consequences, greatest for older males.

**Clark et al. 2022.**

**BMC Pulmonary Medicine**, vol. 22, no. 1.

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**Keywords:** Cross-sectional population survey; income foregone; persisting breathlessness; workforce participation.

**Evidence Level:** 4A

**Link:** <https://bmcpulmed.biomedcentral.com/articles/10.1186/s12890-022-01861-y>

### **Preventing the progression of text neck in a young man: A case report**

**Background:** Text neck describes an overuse injury of the cervical spine resulting from the repetitive stress of prolonged forward head flexion while looking down on a mobile screen. **Methods:** This case report

describes a 24-year-old young man who presented with a 12-month history of head and neck pain and paresthesia of the right upper limb. The patient worked as a YouTuber and has been editing and posting videos on the website for three years. One year prior to referral for chiropractic assessment, the patient first visited his family physician for similar complaints. Based on cervical radiographs, the diagnosis of cervical spondylosis was given. Previous management included pain medication and muscle relaxants. Interventions included repeated physical therapy, cervical traction, and acupuncture, with some temporary relief during the subsequent year. However, severe flare-up of the symptoms occurred, which was brought about by working for extended periods on his smartphone, for which the patient sought chiropractic attention. X-ray imaging showed cervical kyphosis with C5 vertebral rotation, hypertonicity of the paraspinal muscles, and paresthesia in the right C6 dermatome distribution, which were consistent with text neck syndrome associated with cervical spondylosis and right C6 radiculopathy. The intervention consisted of improving posture while texting, cervical manipulation, and extension traction therapy. After 9 months of treatment sessions, the symptomatic and functional improvement was reflected by the radiographic changes in the cervical curve correction and the normalized paraspinal muscle tension on surface electromyology. **Conclusion:** Frequent breaks along with correct posture while using smartphones will be the key entities to prevent the occurrence of text neck syndrome.

**Chu 2022.**

**Radiology Case Reports, vol. 17, no. 3.**

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**Keywords:** Cervical radiculopathy; cervical spondylosis; chiropractic manipulation; surface electromyology; text neck.

**Evidence Level:** 5A

**Link:** <https://www.sciencedirect.com/science/article/pii/S1930043321009146?via%3Dihub>

## Occupational Exposure

*This month, studies explore issues associated with occupational exposure to noise, dust, infectious diseases, radon, tobacco smoke, inorganic lead compounds, antineoplastic drugs, cobalt, and oxygen depletion.*

### Bottom-up and top-down attention impairment induced by long-term exposure to noise in the absence

**Background:** We aimed to assess the effect of noise exposure on bottom-up and top-down attention functions in industrial workers based on behavioral and brain responses recorded by the multichannel electroencephalogram (EEG). **Method:** In this cross-sectional study, 563 shipyard noise-exposed workers with clinical normal hearing were recruited for cognitive testing. Personal cumulative noise exposure (CNE) was calculated with the long-term equivalent noise level and employment duration. The performance of cognitive tests was compared between the high CNE group (H-CNE, >92.2) and the low CNE group; additionally, brain responses were recorded with a 256-channel EEG from a subgroup of 20 noise-exposed (NG) workers, who were selected from the cohort with a pure tone threshold <25 dB HL from 0.25 to 16 kHz and 20 healthy controls matched for age, sex, and education. P300 and mismatch negativity (MMN) evoked by auditory stimuli were obtained to evaluate the top-down and bottom-up attention functions. The sources of P300 and MMN were investigated using GeoSource. **Results:** The total score of the cognitive test ( $24.55 \pm 3.71$  vs.  $25.32 \pm 2.62$ ,  $p < 0.01$ ) and the subscale of attention score ( $5.43 \pm 1.02$  vs.  $5.62 \pm 0.67$ ,  $p < 0.001$ ) were significantly lower in the H-CNE group than in the L-CNE group. The attention score has the fastest decline of all the cognitive domain dimensions (slope = -0.03 in individuals under 40 years old,  $p < 0.001$ ; slope = -0.06 in individuals older than 40 years old,  $p < 0.001$ ). When NG was compared with controls, the P300 amplitude was significantly decreased in NG at Cz ( $3.9 \pm 2.1$  vs.  $6.7 \pm 2.3$   $\mu V$ ,  $p < 0.001$ ). In addition, the latency of P300 ( $390.7 \pm 12.1$  vs.  $369.4 \pm 7.5$  ms,  $p < 0.001$ ) and MMN ( $172.8 \pm 15.5$  vs.  $157.8 \pm 10.5$  ms,  $p < 0.01$ ) was significantly prolonged in NG compared with controls. The source for MMN for controls was in the left BA11, whereas the noise exposure group's source was lateralized to the BA20. **Conclusion:** Long-term exposure to noise deteriorated the bottom-up and top-down attention functions even in the absence of threshold shifts, as evidenced by behavioral and brain responses.

**Wang et al. 2022.**



**Frontiers in Neurology, vol. 1.**

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**Keywords:** P300; attention function; bottom-up; mismatch negativity; noise; top-down.

**Evidence Level:** 4A

**Link:** <https://www.frontiersin.org/articles/10.3389/fneur.2022.836683/full>

### **Recommendations related to occupational infection prevention and control training to protect healthcare workers from infectious diseases: a scoping review of infection prevention and control guidelines**

**Background:** Events such as the COVID-19 pandemic remind us of the heightened risk that healthcare workers (HCWs) have from acquiring infectious diseases at work. Reducing the risk requires a multimodal approach, ensuring that staff have the opportunity to undertake occupational infection prevention and control (OIPC) training. While studies have been done within countries to look at availability and delivery of OIPC training opportunities for HCWs, there has been less focus given to whether their infection prevention and control (IPC) guidelines adhere to recommended best practices. **Objectives:** To examine national IPC guidelines for the inclusion of key recommendations on OIPC training for HCWs to protect them from infectious diseases at work and to report on areas of inconsistencies and gaps. **Methods:** We applied a scoping review method and reviewed guidelines published in the last twenty years (2000-2020) including the IPC guidelines of World Health Organization and the United States Centers for Disease Control and Prevention. These two guidelines were used as a baseline to compare the inclusion of key elements related to OIPC training with IPC guidelines of four high-income countries /regions i.e., Gulf Cooperation Council, Australia, Canada, United Kingdom and four low-, and middle-income countries (LMIC) i.e. India, Indonesia, Pakistan and, Philippines. **Results:** Except for the Filipino IPC guideline, all the other guidelines were developed in the last five years. Only two guidelines discussed the need for delivery of OIPC training at undergraduate and/or post graduate level and at workplace induction. Only two acknowledged that training should be based on adult learning principles. None of the LMIC guidelines included recommendations about evaluating training programs. Lastly the mode of delivery and curriculum differed across the guidelines. **Conclusions:** Developing a culture of learning in healthcare organizations by incorporating and evaluating OIPC training at different stages of HCWs career path, along with incorporating adult learning principles into national IPC guidelines may help standardize guidance for the development of OIPC training programs. Sustainability of this discourse could be achieved by first updating the national IPC guidelines. Further work is needed to ensure that all relevant healthcare organisations are delivering a package of OIPC training that includes the identified best practice elements.

**Qureshi et al. 2022.**

**BMC Health Services Research, vol. 22, no. 1.**

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**Keywords:** Healthcare workers; infection control; infectious disease transmission; occupational health; practice guidelines; training programs.

**Evidence Level:** 6A

**Link:** <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-022-07673-4>

### **Quantitative evaluation of radon, tobacco use and lung cancer association in an occupational cohort with 27 follow-up years**

**Background:** Occupational radon cohorts provide important information about exposure at residential level, which are difficult to observe prospectively. However, evidence about radon-related lung cancer risks from initial exposure in childhood or interaction between radon and smoking is still limited. **Methods:** A total of 6017 tin miners with at least 10 years of underground radon exposure were enrolled beginning in 1992 and followed for up to 27 years. Lung cancer risks were estimated by modeling total and intensity of radon exposure. **Results:** A total of 933 lung cancer cases occurred in this cohort over 89,092 person-years of follow up. Excess relative risk increased by 0.96% per cumulative working level month (WLM). A unique aspect of this population was the early age at first radon exposure for workers. Results showed that lung cancer risk from initial radon exposure in childhood (<13 years old) was greater than risk when first exposure occurred at later ages (13-17, 18-24, and ≥ 25 years old). Moreover, risk declined with years since

last exposure and attained age, but increased with age at last exposure. Importantly, these patterns were stable after adjustment for tobacco use or arsenic exposure. For joint effects of radon and other agents, our results support sub-multiplicative as the most likely model for interaction between radon and tobacco use or arsenic exposure. **Conclusion:** This study highlights the possible importance of radon exposure in childhood in cancer etiology and suggests another potential strategy to mitigate the global lung cancer burden.

**Su et al. 2022.**

**Ecotoxiology and Environmental Safety, vol. 1.**

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**Keywords:** Cohort; lung cancer; radon; tobacco use; total exposure and intensity.

**Evidence Level:** 4A

**Link:** <https://www.sciencedirect.com/science/article/pii/S0147651322000732?via%3Dihub>

### **Rapid review of dermal penetration and absorption of inorganic lead compounds for occupational risk assessment**

**Background:** Lead (Pb) exposure continues to be a significant public health issue in both occupational and non-occupational settings. The vast majority of exposure and toxicological studies have focused on effects related to inhalation and gastrointestinal exposure routes. Exposure to inorganic Pb compounds through dermal absorption has been less well studied, perhaps due to the assumption that the dermal pathway is a minor contributor to aggregate exposures to Pb compounds. **Methods:** The aim of this rapid review was to identify and evaluate published literature on dermal exposures to support the estimation of key percutaneous absorption parameters (Kp, flux, diffusion rate) for use in occupational risk assessment.

**Results:** Eleven articles were identified containing information from both in vitro and in vivo systems relevant to percutaneous absorption kinetics. These articles provided 24 individual study summaries and information for seven inorganic Pb compounds. The vast majority of study summaries evaluated (n = 22, 92%) reported detectable amounts of dermal absorption of inorganic Pb. Data were identified for four Pb compounds (Pb acetate, Pb nitrate, Pb oxide, and Pb metal) that may be sufficient to use in evaluating physiologically based pharmacokinetic models. Average calculated diffusion rates for the pool of animal and human skin data ranged from 10<sup>-7</sup> to 10<sup>-4</sup> mg cm<sup>-2</sup> h<sup>-1</sup>, and Kp values ranged from 10<sup>-7</sup> to 10<sup>-5</sup> cm h<sup>-1</sup>. Study design and documentation were highly variable, and only one of the studies identified was conducted using standard test guideline-compliant methodologies. Two studies provided quality estimates on the impacts of dermal absorption from water-insoluble Pb compounds on blood Pb levels. These two studies reported that exposures via dermal routes could elevate blood Pb by over 6 µg dl<sup>-1</sup>. This estimation could represent over 100% of 5 µg dl<sup>-1</sup>, the blood Pb associated with adverse health effects in adults. The utility of these estimates to occupational dermal exposures is limited, because the confidence in the estimates is not high. **Conclusion:** The literature, while of limited quality, overall strongly suggests inorganic Pb has the potential for dermal uptake in meaningful amounts associated with negative health outcomes based on upper bound diffusion rate estimates. Future standard test guideline-compliant studies are needed to provide high-confidence estimates of dermal uptake. Such data are needed to allow for improved evaluation of Pb exposures in an occupational risk assessment context.

**Niemeier et al. 2022.**

**Annals of Work, Exposure and Health, vol. 66, no. 3.**

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**Keywords:** Pb; dermal exposure; dermal penetration; inorganic lead; lead; lead acetate; lead metal; lead nitrate; lead ortho-arsenate; lead oxide; lead subacetate; lead sulfate; metals; occupational; percutaneous absorption; review.

**Evidence Level:** 6A

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8930439/>

### **Occupational and community risk of SARS-CoV-2 infection among employees of a long-term care facility: an observational study**

**Background:** We investigated the contribution of both occupational and community exposure for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection among employees of a university-affiliated long-term care facility (LTCF), during the 1<sup>st</sup> pandemic wave in Switzerland (March-June 2020).

**Methods:** We performed a nested analysis of a seroprevalence study among all volunteering LTCF staff to determine community and nosocomial risk factors for SARS-CoV-2 seropositivity using modified Poisson regression. We also combined epidemiological and genetic sequencing data from a coronavirus disease 2019 (COVID-19) outbreak investigation in a LTCF ward to infer transmission dynamics and acquisition routes of SARS-CoV-2, and evaluated strain relatedness using a maximum likelihood phylogenetic tree.

**Results:** Among 285 LTCF employees, 176 participated in the seroprevalence study, of whom 30 (17%) were seropositive for SARS-CoV-2. Most (141/176, 80%) were healthcare workers (HCWs). Risk factors for seropositivity included exposure to a COVID-19 inpatient (adjusted prevalence ratio [aPR] 2.6; 95% CI 0.9-8.1) and community contact with a COVID-19 case (aPR 1.7; 95% CI 0.8-3.5). Among 18 employees included in the outbreak investigation, the outbreak reconstruction suggests 4 likely importation events by HCWs with secondary transmissions to other HCWs and patients. **Conclusions:** These two complementary epidemiologic and molecular approaches suggest a substantial contribution of both occupational and community exposures to COVID-19 risk among HCWs in LTCFs. These data may help to better assess the importance of occupational health hazards and related legal implications during the COVID-19 pandemic.

**Lenggenhager et al. 2022.**

**Antimicrobial Resistance and Infection Control, vol. 11, no. 1.**

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**Keywords:** COVID-19; nosocomial outbreaks; occupational exposure; SARS-CoV-2.

**Evidence Level:** 4B1

**Link:** <https://aricjournal.biomedcentral.com/articles/10.1186/s13756-022-01092-0>

### **Exposure to antineoplastic drugs in occupational settings: a systematic review of biological monitoring data**

**Background and Methods:** The high toxicity of antineoplastic drugs (ADs) makes them dangerous not only for patients, but also for exposed workers. Therefore, the aim of this review was to provide an updated overview of the biological monitoring of occupational AD exposure in order to extrapolate information useful to improve risk assessment and management strategies in workplaces. Several studies demonstrated that remarkable portions of healthcare workers may have traces of these substances or their metabolites in biological fluids, although with some conflicting results. **Results:** Nurses, directly engaged in AD handling, were the occupational category at higher risk of contamination, although, in some cases, personnel not involved in AD-related tasks also showed quantifiable internal doses. Overall, further research carried out on greater sample sizes appears necessary to gain deeper insight into the variability retrieved in the reported results. This may be important to understand the impact of the extent of ADs use, different handling, procedures, and cleaning practices, spill occurrence, training of the workforce, as well as the adoption of adequate collective and personal protective equipment in affecting the occupational exposure levels. **Conclusions:** This may support the achievement of the greatest clinical efficiency of such therapies while assuring the health and safety of involved workers.

**Leso et al. 2022.**

**International Journal of Environmental Research and Public Health, vol. 19, no. 6.**

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**Keywords:** Antineoplastic drugs; biomarkers; cytotoxic drugs; exposure evaluation; healthcare workers; human biomonitoring; internal dose; job exposure; risk assessment; risk management.

**Evidence Level:** 1A

**Link:** <https://www.mdpi.com/1660-4601/19/6/3737>

### **Site-specific cancer risk following cobalt exposure via orthopedic implants or in occupational settings: A systematic review and meta-analysis**

**Background:** In 2020, the European Commission up-classified metal cobalt as Class 1B Carcinogen (presumed to have carcinogenic potential) based primarily on data from rodent inhalation carcinogenicity studies. This up-classification requires an assessment under the Medical Device Regulations of cobalt cancer risk from medical devices. **Methods:** We performed a systematic review and meta-analysis to evaluate site-specific cancer risks with cobalt exposure from either total joint replacement (TJR) or occupational exposure (OC). Results were stratified by exposure type (OC or TJR), exposure level (metal-on-metal (MoM) or non-MoM), follow-up duration (latency period: <5, 5-10 or >10 years), and cancer incidence or mortality (detection bias assessment). **Results:** From 30 studies (653,104 subjects, average 14.5 years follow-up), the association between TJR/OC and cancer risk was null for 22 of 27 cancer sites, negative for 3 sites, and positive for prostate cancer and myeloma. Significant heterogeneity and large estimate ranges were observed for many cancer sites. No significant increase in estimates was observed by exposure level or follow-up duration. **Conclusion:** The current evidence, including weak associations, heterogeneity across studies and no increased association with exposure level or follow-up duration, is insufficient to conclude that there exists an increased risk for people exposed to cobalt in TJR/OC of developing site-specific cancers.

**Holy et al. 2022.**

**Regulatory Toxicology and Pharmacology, vol. 129.**

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**Keywords:** Cobalt; joint prosthesis; meta-analysis; neoplasms; occupational exposure; risk.

**Evidence Level:** 1A

**Link:** [https://linkinghub.elsevier.com/retrieve/pii/S0273-2300\(21\)00237-3](https://linkinghub.elsevier.com/retrieve/pii/S0273-2300(21)00237-3)

### **Is the new EN689 a better standard to test compliance with occupational exposure limits in the workplace?**

**Background:** To evaluate the performance of three measurement strategies to test compliance with occupational exposure limits of similarly exposed groups (SEGs): the old and new versions of EN689, and the BOHS-NVvA guidance on measuring compliance. **Methods:** Respirable dust exposures concentrations (n = 1383) measured within the member companies of IMA-Europe were used to compare compliance decisions between the three measurement strategies. A total of 210 SEGs of which 158 with repeated measurements were analysed. An R studio OHcomplianceStrategies package was created for the purpose. **Results:** The old EN689 strategy resulted in the highest number of compliant SEGs in the preliminary tests and statistical test (49-52% and 83%) with lower percentages of compliance with the new EN689 standard (32-44% and 71%). The percentage of non-compliant SEGs was relatively similar between the old and new EN689 for the preliminary tests (1-12% versus 6-11%). However, the new EN689 declared almost twofold more SEGs non-compliant when applying the statistical test (29% versus 17%). The BOHS-NVvA individual test showed results in between the 26% non-compliant SEGs. **Conclusion:** This study showed differences in compliance decisions between the old and new EN689, with the new EN689 being considerably more stringent and resulting in more non-compliant SEGs.

**D'Errico et al. 2022.**

**Annals of Work, Exposure and Health, vol. 66, no. 3.**

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**Keywords:** BOHS-NVvA; EN689; compliance; measurement strategy; occupational exposure limits; preliminary test; similar exposure group; statistical test.

**Evidence Level:** 5B

**Link:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8922169/>

### **Assessment of knowledge, attitude, perceptions and risk assessment among workers in e-waste recycling shops, Thailand**

**Background:** To study the knowledge, attitudes and perceptions, to study the health effects, and to investigate the concentration of Pb and Cd in indoor dust samples, drinking water samples, and personal air samples and to assess the health risk among workers who worked at e-waste recycling shops in the southern region, Thailand. **Methods:** This cross-sectional descriptive study was conducted among workers from 136 electronic waste recycling stores in Southern Thailand, between January and July 2021. The study questionnaire was given to the 272 e-waste workers participating. Indoor dust, drinking water, and personal air samples were collected from 27 e-waste shops and the concentrations of Pb and Cd in all samples were determined by graphite furnace atomic absorption spectrometry. Descriptive statistics and the simple linear regression were used to analyze. **Results:** Overall, 176 employees (64.7%) suffered nasal irritation, 181 employees (66.5%) reported coughing/sneezing, and 163 employees (59.9%) had inconvenient breathing/jamming symptoms. Also, 158 employees (58.1%) had skin peeling symptoms, and 188 employees (69.1%) had muscle aches. The results indicate the positive influence of increasing knowledge and attitudes on the average practice score. The hazardous index (HI)-values of indoor dust samples, drinking water samples, and personal air samples were less than 1, was considered health-protective. **Conclusion:** The results will provide the direct evidence needed by e-waste managers to warn learners. Thus, there is a need for education programme to increase knowledge among the workers. In addition, information dissemination, involvement with organizations and associations is a necessity for workers in this study.

**Decharat et al. 2022.**

**Environmental Analysis Health and Toxicology**, vol. 37, no. 1.

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**Keywords:** Attitude; knowledge; perception; recycling shops; risk assessment.

**Evidence Level:** 5B

**Link:** <https://www.eaht.org/journal/view.php?doi=10.5620/eaht.2022003>

### **Oxygen gas sensing using a hydrogel-based organic electrochemical transistor for work safety applications**

**Background:** Oxygen depletion in confined spaces represents one of the most serious and underestimated dangers for workers. Despite the existence of several commercially available and widely used gas oxygen sensors, injuries and deaths from reduced oxygen levels are still more common than for other hazardous gases. **Methods:** Here, we present hydrogel-based organic electrochemical transistors (OECTs) made with the conducting polymer poly(3,4-ethylenedioxythiophene): poly(styrene sulfonate) (PEDOT:PSS) as wearable and real-time oxygen gas sensors. **Results:** After comparing OECT performances using liquid and hydrogel electrolytes, we identified the best PEDOT:PSS active layer and hydrogel coating (30  $\mu\text{m}$ ) combination for sensing oxygen in the concentration range of 13-21% (v/v), critical for work safety applications. The fast  $\text{O}_2$  solubilization in the hydrogel allowed for gaseous oxygen transduction in an electrical signal thanks to the electrocatalytic activity of PEDOT:PSS, while OECT architecture amplified the response (gain  $\sim 104$ ). OECTs proved to have comparable sensitivities if fabricated on glass and thin plastic substrates,  $(-12.2 \pm 0.6)$  and  $(-15.4 \pm 0.4)$   $\mu\text{A}/\text{dec}$ , respectively, with low power consumption ( $< 40 \mu\text{W}$ ). **Conclusion:** Sample bending does not influence the device response, demonstrating that our real-time conformable and lightweight sensor could be implemented as a wearable, noninvasive safety tool for operators working in potentially hazardous confined spaces.

**Decataldo et al. 2022.**

**Polymers (Basel)**, vol. 14, no. 5.

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**Keywords:** PEDOT:PSS; hydrogel; organic electrochemical transistor; oxygen sensor; work safety.

**Evidence Level:** 5A

**Link:** <https://www.mdpi.com/2073-4360/14/5/1022>



### **Health care workers' experiences during the COVID-19 pandemic: a scoping review**

**Background:** COVID-19 has challenged health systems worldwide, especially the health workforce, a pillar crucial for health systems resilience. Therefore, strengthening health system resilience can be informed by analyzing health care workers' (HCWs) experiences and needs during pandemics. This review synthesizes qualitative studies published during the first year of the COVID-19 pandemic to identify factors affecting HCWs' experiences and their support needs during the pandemic. This review was conducted using the Joanna Briggs Institute methodology for scoping reviews. A systematic search on PubMed was applied using controlled vocabularies. Only original studies presenting primary qualitative data were included.

**Results:** 161 papers that were published from the beginning of COVID-19 pandemic up until 28th March 2021 were included in the review. Findings were presented using the socio-ecological model as an analytical framework. At the individual level, the impact of the pandemic manifested on HCWs' well-being, daily routine, professional and personal identity. At the interpersonal level, HCWs' personal and professional relationships were identified as crucial. At the institutional level, decision-making processes, organizational aspects and availability of support emerged as important factors affecting HCWs' experiences. At community level, community morale, norms, and public knowledge were of importance. Finally, at policy level, governmental support and response measures shaped HCWs' experiences. The review identified a lack of studies which investigate other HCWs than doctors and nurses, HCWs in non-hospital settings, and HCWs in low- and lower middle income countries. **Discussion:** This review shows that the COVID-19 pandemic has challenged HCWs, with multiple contextual factors impacting their experiences and needs. To better understand HCWs' experiences, comparative investigations are needed which analyze differences across as well as within countries, including differences at institutional, community, interpersonal and individual levels. Similarly, interventions aimed at supporting HCWs prior to, during and after pandemics need to consider HCWs' circumstances. **Conclusions:** Following a context-sensitive approach to empowering HCWs that accounts for the multitude of aspects which influence their experiences could contribute to building a sustainable health workforce and strengthening health systems for future pandemics.

**Chemali et al. 2022.**

**Human Resources for Health, vol. 20, no. 1.**

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**Keywords:** COVID-19; coping; experiences; health care workers; health systems; pandemic; resilience.

**Evidence Level:** 6A

**Link:** <https://human-resources-health.biomedcentral.com/articles/10.1186/s12960-022-00724-1>

### **Sedentary Practices**

*This month, studies explore the role of sit-to stand desks and the relationship between sedentary work and participation in leisure time physical activity.*

#### **The views of general practitioners about using sit-stand desks: An observational study**

**Background:** Occupational sitting is associated with negative health outcomes. Sit-stand workstations have been shown to reduce sitting time in office workers, although there is no evidence on whether this change to practice would be acceptable to GPs. **Aim:** To investigate GPs views about the use of sit-stand desks within general practice and the potential impact they may have on the nature and quality of consultations with adult patients. **Design & setting:** Observational study involving GPs located across the United Kingdom. **Method:** A online survey was emailed to members of the Royal College of General Practitioners and shared on social media. Only GPs working in the UK were eligible. The survey included questions on socio-demographics, GPs views about the use of sit-stand desks within their work, their levels of physical activity, total time spent sitting each day at work and time spent at work. **Results:** 14,142 surveys were sent by RCGP to their members with 810 GPs responding with a further 33 responding via social media. 60.6% of GPs would like a sit-stand desks in their consultation room, while 19.2% already had one. Most GPs thought sit-stand desks could be used for telephone consultations (91.9%) and administration tasks (92.3%). There was less agreement about whether they could be used during face-to-face consultations (35% agreed), with

the potential impact on the doctor-patient relationship raised as the primary concern. **Conclusion:** The implementation of sit-stand desks had support from GPs, but their possible impact on the doctor-patient relationship should be considered in future research.

**Bibble et al. 2022.**

**BJGP Open, vol 4.**

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**Keywords:** General practice; general practitioners; sedentary behaviour; sit-stand desks.

**Evidence Level:** 4B

**Link:** <https://bjgpopen.org/content/early/2022/03/03/BJGPO.2021.0203.long>

### **Evaluating a multi-component intervention to reduce and break up office workers' sitting with sit-stand desks using the APEASE criteria**

**Background:** Sedentary workplace interventions have had success in reducing excessive sitting time in office workers, but barriers to implementation and uptake remain. This study formally assessed a theory-derived, sit-stand desk intervention using the APEASE (Acceptability, Practicability, Effectiveness, Affordability, Side-effects, Equity) criteria. **Methods:** Thirteen adults (eight female, mean age  $38 \pm 10$  years) from the treatment arm of a sedentary behaviour intervention participated in semi-structured interviews. Thematic codes were inductively assigned to data items followed by deductive charting using the APEASE criteria. **Results:** The intervention was highly acceptable, practicable, safe to deploy, and helped workers reduce workplace sitting time, though individual preferences and workload mediated engagement. Affordability of sit-stand desks and Equity of access were potential barriers to uptake.

**Conclusions:** Through the lens of the APEASE criteria, this theory-derived, multi-component sit-stand desk intervention showed acceptability, practicability and effectiveness in reducing and breaking up sedentary time at work with minimal side effects. Using this approach with further tailoring and personalisation may help workers achieve greater reductions in workplace sitting, though affordability and equity should be considered further.

**Brierley et al. 2022.**

**BMC Public Health, vol. 22, no. 1.**

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**Keywords:** Acceptability; apease; behaviour change; feasibility; intervention; office worker; sedentary.

**Evidence Level:** 5A

**Link:** <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-12794-w>

### **Sedentary work and participation in leisure-time physical activity**

**Background:** Demanding psychosocial work characteristics, such as high job demands, can have a detrimental impact on leisure-time physical activity (LTPA), with adverse consequences for employee health and well-being. However, the mechanisms and moderators of this crossover effect are still largely unknown. We therefore aimed to identify and test potential mediating and moderating factors from within and outside the work environment. Based on the previous research, we expected job demands to be negatively related to LTPA through fatigue. In addition, we expected that job control and worktime control would attenuate the relationship between job demands and fatigue. Furthermore, we hypothesized that autonomous exercise motivation and spontaneous action planning would attenuate the relationship between fatigue and LTPA. In addition to these cross-sectional hypotheses, we expected the same effects to predict a change in LTPA in the following year. **Methods:** To investigate these assumptions, a preregistered longitudinal survey study was conducted among a large sample of Dutch employees in sedentary jobs. Participants reported on the constructs of interest in 2017 and 2018 ( $N = 1189$  and  $665$  respectively) and the resulting data were analyzed using path analyses. **Results:** Our cross-sectional analyses confirm a weak indirect, negative association between job demands and LTPA, via fatigue. However, this finding was not observed in our longitudinal analyses and none of the other hypotheses were confirmed. **Conclusion:** This study shows that, among employees with relatively healthy psychosocial work characteristics (i.e., high job control), the evidence for an impact of these work characteristics on participation in LTPA is limited.

**van As et al. 2022.**

**International Archives of Occupational and Environmental Health, vol. 95, no. 2.**

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**Keywords:** Fatigue; leisure-time physical activity; motivation; occupational health; psychosocial job characteristics.

**Evidence Level:** 4B

**Link:** <https://link.springer.com/article/10.1007/s00420-021-01750-7>

## Physical Activity

*This month, studies explore the role of occupational physical activity on overall health and wellbeing, including self-reported quality of life and measures of cardiovascular disease mortality.*

### **Do overweight/obesity and low levels of leisure-time vigorous physical activity moderate the effect of occupational physical activity on self-rated health of construction workers?**

**Background:** To investigate the combined effects of occupational physical activity (OPA) and either overweight/obesity or low levels of leisure-time vigorous physical activity (LTVPA) on self-rated health.

**Methods:** A longitudinal study was performed among 29,987 construction workers with complete data on 2 Workers' Health Surveillance Programs during 2010-2018. Self-reported OPA involved strenuous work postures and manual material handling. Low level of LTVPA was defined as self-reported vigorous activity for less than three times per week lasting at least 20 min per session. Overweight and obesity were based on Body Mass Index (BMI) ( $25.0 \leq \text{BMI} < 30.0 \text{ kg/m}^2$  and  $\text{BMI} \geq 30.0 \text{ kg/m}^2$ , respectively) using measured body height and weight. Self-rated health was measured using a single item question. Logistic regression analysis was used to investigate the associations between the separate risk factors at baseline and self-rated health at follow-up. The combined effects of demanding OPA and either overweight/obesity or low level of LTVPA on self-rated health were analyzed using the relative excess risk due to interaction (RERI).

**Results:** Mean follow-up duration was 31.7 (SD = 14.9) months. Construction workers with strenuous work postures (OR 1.35 95% CI 1.25-1.46), manual material handling (OR 1.29 95% CI 1.19-1.40), obesity (OR 1.31 95% CI 1.17-1.47) and low LTVPA (OR 1.13 95% CI 1.01-1.25) were more likely to report poor self-rated health at follow-up. No statistically significant interaction effects were found for OPA and obesity or low LTVPA. **Conclusions:** OPA, obesity and low level of LTVPA were separate risk factors for poor self-rated health, but did not appear to have a synergistic effect.

**Van de Berge et al. 2022.**

**International Archives of Occupational and Environmental Health, vol. 95, no. 2.**

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**Keywords:** Interaction; leisure-time physical activity; obesity; occupational physical activity; overweight; self-rated health; workers' health surveillance.

**Evidence Level:** 4A

**Link:** <https://link.springer.com/article/10.1007/s00420-021-01771-2>

### **Physical activity at work may not be health enhancing. A systematic review with meta-analysis on the association between occupational physical activity and cardiovascular disease mortality covering 23 studies with 655 892 participants**

**Background:** Emerging evidence suggests contrasting health effects for leisure-time and occupational physical activity. In this systematic review, we synthesized and described the epidemiological evidence regarding the association between occupational physical activity and cardiovascular disease (CVD) mortality.

**Methods:** A literature search was performed in PubMed, Embase, CINAHL, PsycINFO and Evidence-Based Medicine Reviews, from database inception to 17 April 2020. Articles were included if they described original observational prospective research, assessing the association between occupational physical activity and CVD mortality among adult workers. Reviews were included if they controlled for age and gender and at least one other relevant variable. We performed meta-analyses on the associations between occupational physical activity and CVD mortality. **Results:** We screened 3345 unique articles, and 31 articles (from 23 studies) were described in this review. In the meta-analysis, occupational physical

activity showed no significant association with overall CVD mortality for both males [hazard ratio (HR) 1.00, 95% confidence interval (CI) 0.87-1.15] and females (HR 0.95, 95% CI 0.82-1.09). Additional analysis showed that higher levels of occupational physical activity were non-significantly associated with a 15% increase in studies reporting on the outcome ischemic heart disease mortality (HR 1.15, 95% CI 0.88-1.49).

**Conclusions:** While the beneficial association between leisure-time physical activity and CVD mortality has been widely documented, occupational physical activity was not found to have a beneficial association with CVD mortality. This observation may have implications for our appreciation of the association between physical activity and health for workers in physically demanding jobs, as occupational physical activity may not be health enhancing.

**Cillekens et al. 2022.**

**Scandinavian Journal of Work, Environment and Health, vol. 48, no. 2.**

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**Keywords:** Physical activity; occupational; cardiovascular disease; mortality.

**Evidence Level:** 1A

**Link:** <https://www.sjweh.fi/article/3993>

### **Positive effects of an online workplace exercise intervention during the COVID-19 pandemic on quality of life perception in computer workers: A quasi-experimental study design**

**Background:** Computer workers' sedentary work, together with less active lifestyles, aggravated by the COVID-19 pandemic, represents a high risk for many chronic diseases, leading to a decrease in health-related quality of life (QoL). Workplace exercises consist of a set of physical exercises, implemented during work breaks, that have multiple benefits for workers' health. To assess the impact of online workplace exercises on computer workers' perception of quality of life. **Methods:** Quasi-experimental study with two groups: a control group (n = 26) and an intervention group (n = 13). The inclusion criteria were that participants must be aged between 18 and 65 years old and the exclusion criteria included diagnosis of non-work-related medical conditions. The interventions consisted of workplace exercises, which were applied for 17 consecutive weeks, each session lasting 15 min, three times a week. The exercise programme, performed online and guided by a physiotherapist, consisted of mobility exercises, flexibility and strength exercises, with the help of a TheraBand® for elastic resistance. The control group were not subjected to any intervention. A socio-demographic questionnaire and the Health Survey Questionnaire (SF-36v2) were used in two assessment stages (M0-baseline and M1-final of intervention). A mixed ANOVA with interaction time\*group was used to evaluate the effect of the exercise programme. **Results:** A good perception of the QoL was obtained in both stages. The exercise programme had a positive effect in the domains of Pain ( $p_{\text{time*group}} = 0.012$ ,  $\eta^2_p = 0.158$ ), Physical Function ( $p_{\text{time*group}} = 0.078$ ,  $\eta^2_p = 0.082$ ), Physical Performance ( $p_{\text{time*group}} = 0.052$ ,  $\eta^2_p = 0.098$ ), and Emotional Performance ( $p_{\text{time*group}} = 0.128$ ,  $\eta^2_p = 0.061$ ). **Conclusion:** After 17 weeks of workplace exercises, it became clear that the intervention group positively increased their QoL perception, with this improvement being significant in the Pain domain, which resulted in an improvement in their health condition. Therefore, further studies are needed to determine the optimal exercise for CWs, with detailed exercise types, different intensities and focused on various health conditions.

**Moreira et al. 2022.**

**International Journal of Environmental Research and Public Health, vol. 19, no. 5.**

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**Keywords:** SF-36v2; occupational health; online exercise programme; telework.

**Evidence Level:** 3A

**Link:** <https://www.mdpi.com/1660-4601/19/5/3142>

## Musculoskeletal Health

*This month, studies explore the role of manual handling factors such as arm elevation, lifting, carrying, pushing, pulling loads and the implementation of guidelines for pain management and sick leave prescription on musculoskeletal health.*

### How does accelerometry-measured arm elevation at work influence prospective risk of long-term sickness absence?

**Background:** Elevated arm work is prevalent in many jobs. Feasible device-based methods are available to measure elevated arm work. However, we lack knowledge on the association between device-measured elevated arm work and prospective risk of long-term sickness absence (LTSA). We aimed to investigate this association. **Methods:** At baseline, 937 workers wore accelerometers on the right arm and thigh over 1-5 workdays to measure work time spent with elevated arms in an upright position. Between baseline and 4-year prospective follow-up in the national registers, we obtained information on the individuals' first event of LTSA ( $\geq 6$  consecutive weeks). We performed compositional Cox proportional hazard analyses to model the association between work time with arm elevation  $>30^\circ$ ,  $>60^\circ$ , or  $>90^\circ$  and the probability of LTSA.

**Results:** Workers spent 21% of their work time with  $>30^\circ$  arm elevation, 4% with  $>60^\circ$  arm elevation, and 1% with  $>90^\circ$  arm elevation; in the upright body position. We found a positive dose-response association between work time spent with elevated arm work and the risk of LTSA. Specifically, we found that increasing two minutes of work time spent with arm elevation at (i)  $>90^\circ$  increased the risk of LTSA by 14% [hazard ratio (HR) 1.14, 95% confidence intervals (95% CI 1.04-1.25)] (ii)  $>60^\circ$  increased the LTSA risk by 3% (HR 1.03, 95% CI 1.03-1.06), and (iii)  $>30^\circ$  increased the LTSA risk by 1% (HR 1.01, 95% CI 1.00-1.02).

**Conclusion:** Device-measured elevated arm work is associated with increased prospective LTSA. This information ought to be brought into preventive workplace practice by accessible and feasible device-based methods of elevated arm work.

**Gupta et al. 2022.**

**Scandinavian Journal of Work, Environment and Health, vol. 48, no. 2.**

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**Keywords:** Arm work; sickness; absence.

**Evidence Level:** 4A

**Link:** <https://www.sjweh.fi/article/4000>

### Occupational lifting, carrying, pushing, pulling loads and risk of surgery for subacromial impingement syndrome: a register-based cohort study

**Background:** The aim was to examine exposure-response relations between surgery for subacromial impingement syndrome (SIS) and intensities of lifting/carrying and pushing/pulling loads during a 10-year time window. **Methods:** We conducted a register-based cohort study (2003-2008), comprising persons born in Denmark (1933-1977) with  $\geq 5$  years of work experience ( $N=2\,374\,403$ ). Information on surgery for SIS was retrieved from the Danish National Patient Register ( $N=14\,188$ ). Occupational mechanical exposures comprising lifting/carrying loads  $\geq 10$  kg and pushing/pulling loads  $\geq 50$  kg were assessed by combining individual register-based job codes with our expert-based Shoulder job exposure matrix. We created three intensity-specific exposure duration variables by dividing the intensity for lifting/carrying and pushing/pulling loads into three categories (low, medium and high), and summed up number of years in each exposure category for a 10-year time window. The associations were analysed using logistic regression technique equivalent to discrete survival analysis. **Results:** The adjusted OR ( $OR_{adj}$ ) increased with both exposure duration and intensity of lifting/carrying and pushing/pulling. For lifting/carrying, the  $OR_{adj}$  reached a maximum of 1.78 (95% CI 1.66 to 1.89), 2.52 (95% CI 2.32 to 2.74) and 2.96 (95% CI 2.53 to 3.47) after 10 years of exposures for the three exposure intensities. For pushing/pulling, maximum  $OR_{adj}$  was 1.44 (95% CI 1.31 to 1.58), 1.68 (95% CI 1.58 to 1.79) and 1.72 (95% CI 1.50 to 2.00), respectively. **Conclusion:** We found exposure-response relations for lifting/carrying and pushing/pulling across the 10-year time window. The risk was especially pronounced for lifting/carrying compared with pushing/pulling. We did not find indications of safe exposure intensities.

**Riddervold et al. 2022.**



**Occupational and Environmental Medicine, vol. 22.**

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**Keywords:** Musculoskeletal system; public health; upper extremity.

**Evidence Level:** 4B

**Link:** <https://oem.bmj.com/content/early/2022/03/21/oemed-2021-108166.long>

**Evaluation of a guidelines implementation intervention to reduce work disability and sick leaves related to chronic musculoskeletal pain: a theory-informed qualitative study in occupational health care**

**Background:** Guidelines for pain management and sick leave prescription were formulated and implemented in an occupational health services (OHS) in Finland to reduce work disability and sick leaves related to musculoskeletal pain. We investigated how the guidelines implementation intervention may have produced its effects, how the number of prescribed sick leave days varied before and after the launch of the guidelines, and which factors beyond physician behaviour were seen to influence sick leaves.

**Methods:** Seventeen physicians, two occupational physiotherapists and one occupational health care nurse were interviewed. Qualitative content analysis using both inductive and deductive approaches was performed, informed by Behaviour Change Wheel and Theoretical Domains Framework. Employees' sick leave days related to musculoskeletal disorders in 2015-2019 were drawn from the employer's register.

**Results:** Physicians' guidelines adherence was facilitated by psychological capability (e.g., having relevant knowledge, remembering to engage in recommended behaviours), reflective motivation (e.g., guidelines-related behaviours regarded as central part of one's professional role; beliefs in the positive consequences of recommended behaviours to employees and employers), and physical and social opportunities (e.g., adequate physical resources, culture of social support). Some physicians also described barriers to recommended behaviours (e.g., lack of knowledge or non-pharmacological pain treatment tools). The guidelines had served as sources of new knowledge, reminders of recommended practices and means of self-assessment. Considerable declining trend of prescribed sick leave days was detected, especially during the first years after the intervention, levelling off somewhat thereafter. OHS policies and structures were seen to enable professionals' focusing on preventing pain-related disability and prolonged sick leaves. The decline of sickness absences was also attributed to the municipal client organization's commitment and the employees' positive attitudes towards the alternatives to full-time sick leave. **Conclusions:** The guidelines implementation intervention was found successful. The study showed the importance of social and organizational environment supporting physicians' engagement in recommended practices.

**Horppu et al. 2022.**

**BMC Musculoskeletal Disorders, vol. 23, no. 1.**

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**Keywords:** Guideline implementation; intervention evaluation; musculoskeletal pain; occupational health care; sick leave.

**Evidence Level:** 5B

**Link:** <https://bmcmusculoskeletdisord.biomedcentral.com/articles/10.1186/s12891-022-05234-8>

**Impact of work-related chronic low back pain on functional performance and physical capabilities in women and men: A sex-wise comparative study**

**Background:** This study is aimed at determining the impact of work-related low back pain (LBP) on functional performance and physical capabilities. **Methods:** This cross-sectional study included women ( $n = 25$ , mean age,  $38.12 \pm 4.59$ ) and men ( $n = 25$ , mean age,  $37.20 \pm 5.38$ ) with a history of work-related mechanical chronic LBP who visited our university hospital's outpatient department. All participants were assessed for primary outcomes, including the severity of LBP on rest and on activity, functional performance, and physical capabilities using a numeric pain rating scale (NPRS), Roland-Morris disability questionnaire (RDQ), five-time sit-to-stand test (FTSST), and fifty-foot walk test (FFWT), respectively. Independent  $t$ -tests compared the scores of the outcomes between groups while Pearson's correlation coefficient identified the correlation between the outcomes' measures at a significance level of 0.05.

**Results:** With a response rate of 63.29%, a total of fifty participant's data were obtained for the analysis. A comparison between women and men groups highlighted a significant difference in the scores of the FTSST and FFWT; however, there were insignificant differences in the scores of the NPRS at rest, NPRS on activity,

and RDQ. The bivariate correlation revealed a highly significant, positive, and moderate correlation between the scores of NPRS at rest and FTSST, NPRS on activity and FTSST, NPRS at rest and FFWT, NPRS on activity and FFWT, FTSST and RDQ, and FFWT and RDQ in the women group. Similarly, there was a significant, positive, and low correlation between the scores of FTSST and RDQ and FFWT and RDQ in the men group. **Conclusion:** Work-related chronic LBP affected the physical capabilities of women more than those of men. However, it equally affected the functional performance of all participants in the study. Furthermore, work-related chronic LBP affected the physical capabilities (FTSST and FFWT) and functional performance (RDQ) of women more than those of men.

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