



Emerging Evidence Alert

November 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 October 2022 only.

Contents

Description of Evidence Levels Definitions Used in this Review	2
Fostering Work Participation	3
Return to Work	3
Presenteeism and Absenteeism	4
Working Hours	6
Building Employer Capability	6
Wellness Programs	6
Organisational Issues	7
Job Design	7
Shift Work	9
Management and Leadership	10
Work Ability	12
Adapting to the Future of Work	14
Aging Workforce	14
Guiding and Supporting Mental Health and Wellbeing	15
Mental Health	15
Bullying and Harassment	21
Psychosocial Issues	22
Enabling Healthy and Safe Workplaces	25
Health and Wellbeing	25
Work Health and Safety	30
Risk Assessment	32
Chronic Health Issues	33
Occupational Exposure	34
Sedentary Practices	37
Musculoskeletal Health	38

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



Know anyone that would like to subscribe?

Share this with colleagues and professional networks who are interested in receiving the latest WHS research from around the world delivered to their inbox monthly.

[Subscribe now >](#)

Fostering Work Participation

Return to Work

This month we explore return to work issues related to cancer survivors, low back pain and depression

Identification of actions to be taken by managers to facilitate the return to work of cancer survivors:

Consensus between managers and cancer survivors

Background: Managers are considered to be main stakeholders in the return to work (RTW) of cancer survivors. However, the perspectives of cancer survivors and managers differ on what managerial actions should be taken during the RTW of cancer survivors. This difference might put effective collaboration and successful RTW at risk. Therefore, this study aims to reach consensus among managers and cancer survivors on the managerial actions to be taken during the four different RTW phases of cancer survivors (i.e., Disclosure, Treatment, RTW plan, Actual RTW). **Methods:** The Technique for Research of Information by Animation of a Group of Experts (TRIAGE) was implemented with managers and cancer survivors (hereafter referred to as "experts"). An initial list of 24 actions was derived from a previous study. Firstly, for each action, fifteen experts were asked to indicate individually how important this action is per RTW phase (Likert scale from 1 - "Not important at all" to 6 - "Very important"). Consensus was reached when $\geq 80\%$ (i.e., \geq twelve experts) of the experts rated that action ≥ 5 . Secondly, for each phase of the RTW process, the 15 actions with the highest percentage were discussed with eight experts during the collective consultation, except for the actions that already reached consensus. After discussion, the experts voted whether each action was important ("yes" / "no") and consensus required $\geq 87.5\%$ (i.e., \geq seven experts) of the experts to consider an action as important. **Results:** Twenty-five managerial actions were finally retained for at least one of the RTW phases, e.g., Disclosure: "respect privacy" and "radiate a positive attitude", Treatment: "show appreciation" and "allow sufficient sick leave", RTW Plan: "tailor" and "communicate", and Actual RTW: "support practically" and "balance interest". **Conclusion:** Cancer survivors and managers reached consensus on the importance of 25 managerial actions, distributed into each phase of the RTW process. These actions should be considered an interplay of managerial actions by different stakeholders on the part of the employer (e.g., direct supervisor, HR-manager), and should be a responsibility that is shared by these stakeholders. The collective implementation of these actions within the company will help cancer survivors feel fully supported.

Porro 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: Cancer survivors; employer; expert consensus; managers; return to work; TRIAGE method.

Evidence Level: 5B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-14271-w>

Occupational recovery of Dutch workers with low back pain

Background: Low back pain (LBP) is a world leading cause of disability and has substantial impact on individuals and society as a whole. The largest part of the societal burden of LBP is caused by indirect costs, including sick leave. **Aims:** We aimed to describe occupational recovery and associated costs for workers consulting an occupational physician (OP) with LBP, and to determine to what extent this differs by diagnoses: non-specific favourable LBP, non-specific unfavourable LBP, lumbosacral radicular syndrome (LRS) and specific LBP. **Methods:** We analysed longitudinal dynamic cohort data from an occupational health service, representing ~ 1.2 million workers from various companies and sectors throughout the Netherlands. The OP registered data on sick leave and LBP diagnoses. A survival analysis was performed on sick leave duration to determine recovery and a linear regression analysis on cost per episode, adjusting for sex, age and working hours. **Results:** We analysed 5951 LBP episodes from 5472 workers who consulted an OP, with a median and mean duration sick leave of 95 and 151 days, respectively. The probability of not recovering was 82% at 30 days and 10% at 1 year. The mean cost per episode was €15 350. Specific LBP (€22 999; beta (95% confidence interval [CI]): 16 278 (13 325-19 165)) and LRS (€20 111; beta (95% CI): 13

589 (12 527-14 659)) had the longest and most costly episodes, compared to non-specific favourable LBP (€6745; reference group). **Conclusions:** With LRS and non-specific unfavourable LBP accounting for over 83% of LBP-associated sick leave costs, the work-directed care of workers with these two diagnoses deserves increased attention.

Brus et al. 2022.

Occupation Medicine, vol. 72, no. 7.

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

Keywords: Dutch; low back pain; disability; occupation.

Evidence Level: 4B

Link: <https://academic.oup.com/occmed/article/72/7/462/6648385?login=true>

Sustainable return to work after depression - A comparative study among occupational physicians and affected employees

Background: The number of sick days taken from work due to depression is steadily rising. A successful return to work (RTW) is essential for sustainable reintegration. This study aims to identify factors to optimize RTW and to investigate approaches for sustainable RTW (sRTW) after depressive episodes.

Methods: Semi-structured expert interviews with senior occupational physicians (OPs, $N = 5$) served to develop two surveys among OPs ($N = 180$) and employees after depressive episode ($N = 192$). Predictors of RTW rating, workplace-based RTW interventions and sRTW interventions were analyzed using multiple hierarchical regression, chi-square difference and t -tests. **Results:** For OPs, employee training on mental illness prevention was found to be the strongest predictor of overall RTW rating, whereas understanding and appreciation in conversations and stigmatization were strongest predictors of overall RTW rating by the employees. Compared to the employees, OPs reported significantly more availability of workplace-based interventions. To prevent relapse, the employees prioritized sufficient time and financial security during the RTW process more than OPs. **Conclusions:** The study identified facilitating and hindering factors that can inform further research and practice to improve RTW after depressive episodes. To redress the awareness gap about the availability of workplace-based interventions, regular contact between OPs and employees is crucial. Several factors were considered to be of varying importance for relapse prevention by the two groups. Multiple perceptions and needs ought to be taken into account during RTW.

Ersel et al. 2022.

Frontiers in Public Health, vol. 6.

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

Keywords: Depression; occupational health physicians; return to work; sick leave; workplace.

Evidence Level: 5B

Link: <https://www.frontiersin.org/articles/10.3389/fpubh.2022.946396/full>

Presenteeism and Absenteeism

This month we explore issues related to absenteeism amongst healthcare workers and pregnant workers and the impact of the psychosocial work environment on absentee rates

The impact of quality of work organization on distress and absenteeism among healthcare workers

Background: The quality of work organization may be responsible not only for reduced productivity but also for an increased risk of mental and physical disorders. **Methods:** This study was aimed at testing this hypothesis. Workers of a local health unit in Italy were asked to fill out the Work Organization Assessment Questionnaire (WOAQ) during their periodic medical examinations in the second half of 2018. On the same occasion, they also completed the Demand/Control/Support (DCS) measure of job strain, the Effort/Reward Imbalance (ERI) questionnaire, and the General Health Questionnaire (GHQ12) to assess psychological health. **Results:** A total of 345 workers (85.8%) completed the survey. Linear regression analysis showed that the quality of work organization was inversely proportional to psychological health problems ($p < 0.001$). Occupational stress, measured both by job strain and ERI, was a moderating factor in this relationship. The relationship between the WOAQ and psychological health, moderated by job strain or ERI, remained highly significant even after adjustment for sex, age, social support, and overcommitment.

Regression models explained over 40% of the shared variance of the association between quality of work organization and psychological health. The quality of work organization significantly predicted the risk of sickness absence for musculoskeletal disorders (OR = 0.984, CI95% 0.972-0.996) and for other health problems (OR = 0.977, CI95% 0.967-0.988). **Conclusions:** A continuous improvement of work organization must consider not only the clients' or production needs but also the well-being of workers.

Magnavita et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Control; demand; effort/reward imbalance; job strain; mental health; musculoskeletal disorders; occupational stress; overcommitment; sickness absence; social support.

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/19/20/13458>

Occupational stress is associated with job performance among pregnant women in Japan: Comparison with similar age group of women

Background: Pregnancy results in physical and psychological changes in women; however, pregnant women hesitate to take a break from work even when they feel the need. Since working while physically ill leads to decreased job performance, it is important to determine the factors that lead to this phenomenon.

Aim: To study the occupational stress associated with job performance and absenteeism of pregnant women compared with non-pregnant women. **Methods:** In 2019, non-pregnant and pregnant employed women in their 20-40 s in Japan completed an online survey examining job performance (Work Limitation Questionnaire - Short Form), absenteeism, occupational stress (Brief Job Stress Questionnaire), and working situations. **Results:** Of 918 respondents who met the inclusion criteria, 904 were included in the final analysis (454 non-pregnant and 450 pregnant women). Logistic regression analyses showed that absenteeism was significantly higher for pregnant women. However, for women who were absent, there was no significant difference between non-pregnant and pregnant women. After adjusting for attributes and working conditions, pregnant women had significantly higher ($p < .001$) work productivity losses than non-pregnant women, but only in the physical tasks domain; their physical stress response was also higher compared to non-pregnant women ($p = .048$). However, pregnant women reported significantly less interpersonal conflict stress ($p < .001$) and psychological stress ($p = .026$), as well as better workplace support as a buffering factor for stress ($p = .021$), than non-pregnant women. **Conclusion:** Clarifying the physical burden associated with pregnancy and assisting women in coordinating their work duties while considering the physical demands of pregnancy may minimize work productivity losses among pregnant women.

Nakamura et al. 2022.

BMC Pregnancy and Childbirth, vol. 22, no. 1.

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

Keywords: Absenteeism; cross-sectional studies; job performance; occupational health; pregnant women.

Evidence Level: 4B

Link: <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-022-05082-3>

Impact of hypothetical improvements in the psychosocial work environment on sickness absence rates: A simulation study

Background: The association between psychosocial working environments and sickness absence is well-known. However, the potential for reducing sickness absences of different lengths through improvements in psychosocial work factors is not fully understood. We aim to quantify the potential for reducing short-, intermediate- and long-term sickness absence rates, respectively, through hypothetical improvements in several psychosocial work factors. **Methods:** This longitudinal study includes 24 990 public hospital employees from the 2014 wave of the Well-being in Hospital Employees study. The 1-year sickness absence rate was divided into short- (1-3 days), intermediate- (4-28 days) and long-term (29 days or more) periods. We simulated hypothetical scenarios with improvements in 17 psychosocial work factors using the parametric g-formula and estimated resulting changes in sickness absence rate ratios (RRs) with 95% confidence intervals (95% CIs). **Results:** Setting all 17 psychosocial work factors to their most desirable

levels (vs. least desirable levels) was associated with an overall 54% lower rate of sickness absence (95% CI: 48-60%). Reducing bullying (no vs. yes RR: 0.86, 95% CI: 0.83-0.90) and perceived stress (low vs. high RR: 0.90, 95% CI: 0.87-0.92), and increasing skill discretion (high vs. low RR: 0.91, 95% CI: 0.89-0.94) held the largest potential for reducing the total sickness absence rate. Overall, associations were similar for short-, intermediate- and long-term sickness absence. **Conclusions:** The psychosocial working environment was strongly associated with sickness absence. Improving the working environment may have a great impact on short-, intermediate- and long-term sickness absence rates.

Mathisen et al. 2022.

European Journal of Public Health, vol. 32, no. 5.

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: Psychosocial work environment; sickness; absence; employee.

Evidence Level: 4A

Link: <https://academic.oup.com/eurpub/article/32/5/716/6678061?login=true>

Working Hours

Changing employment and work schedule patterns over the 30 working years-a sequential cluster analysis

Background: As labor markets have become increasingly volatile and precarious since 1980s, more workers are susceptible to working conditions such as unpredictable and unstable hours, threatening their economic security. However, our understanding of employment patterns regarding the changes in work schedules over our working lives has yet been established. This study builds our knowledge in this area by paying attention to how social positions may shape the specific work schedule patterns over our working lives. **Methods:** We used the National Longitudinal Survey of Youth-1979 (NLSY79) to examine our research questions. NLSY79 follows a nationally representative sample of United States men and women between the ages of 14 and 22 when first interviewed in 1979. The participants were then interviewed annually until 1994 and then biennially thereafter. We first conducted a sequence analysis to examine work schedule patterns between ages 22 and 53 ($n = 7987$). We then used a multinomial logit regression to examine the factors contributing to specific work schedule patterns, with attention to social position. **Results:** Our sequence analysis results suggest five work schedule patterns during 31 years of adult life: working only standard hours (25%), mainly standard hours with some portions of nonstandard hours (38%), standard hours during early working years but transitioning to either largely variable or mainly evening or night hours (14% and 13%), and mostly not working (10%). Our multinomial logit analysis indicates that being non-Hispanic Black, having a high school degree or below, or having ever experienced poverty or welfare by age 23 were more likely to have a nonstandard work schedule pattern than their counterparts.

Conclusions: Our analysis underscores the dynamic employment patterns over our working lives, with some groups more likely than others to be engaged in nonstandard or volatile work schedules. Importantly, the groups likely to be subject to nonstandard work schedules also tend to have relatively disadvantaged social positions, thus worsening their vulnerability in securing work characterized by stability and economic security.

Han et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: NLSY79; employment patterns; longitudinal; sequence analysis; work schedules.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/20/13677>

Building Employer Capability

Wellness Programs

Changes in fruit and vegetable consumption and leisure time physical exercise after a citizen science-based worksite health promotion program for blue-collar workers

Background: Blue-collar workers have, on average, poorer health than white-collar workers. Existing worksite health promotion programs (WHPPs) are often not successful among blue-collar workers. This study evaluates the effect of the Citizen Science-based WHPP on the targeted lifestyle behaviors among construction workers. **Methods:** The data of 114 participants were retrieved from questionnaires before (T0) and after (T1) the WHPP. Outcome measures were mean and categorical changes in daily fruit and vegetable intake and weekly leisure time physical exercise. Changes were tested using Wilcoxon signed rank tests and McNemar tests. **Results:** No statistically significant changes were found between T0 and T1. In total, 73.7% of the participants felt involved in the WHPP. Changes in the outcome measures were not significantly different between subgroups based on age, nor in subgroups based on feelings of involvement. The low intensity of the developed program could be an explanation for this lack of significant change. **Conclusions:** Future studies using the Citizen Science approach in an occupational setting should aim at developing a more intensified program and should test its effectiveness by comparing changes in a (randomized) controlled trial.

van der Feltz et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Blue-collar workers; citizen science; construction workers; effect evaluation; worksite health promotion program.

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/19/20/13652>

Organisational Issues

Job insecurity, emotional exhaustion, and workplace deviance: The role of corporate social responsibility

Background: Job insecurity is one of top concerns in the contemporary workplace, which significantly affects emotional exhaustion and workplace deviance. **Methods:** Thus, this study seeks to explore the buffering role of employees' corporate social responsibility (CSR) perceptions to against the effect of job insecurity. Based on micro-CSR literature and social identity theory, this study tested the proposition that employees' CSR perceptions moderate the relationship between job insecurity and emotional exhaustion through organizational identification. **Results:** Using three-wave data collected from 145 employees in one of China's biggest computer equipment providers, we found that employees' CSR perceptions alleviate (exacerbate) the negative relationship between quantitative (qualitative) job insecurity and emotional exhaustion via organization identification. **Conclusions:** Our findings provided new insights to scholars and managers in dealing with job insecurity.

Jia et al. 2022.

Frontiers in Public Health, vol. 6.

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

Keywords: Emotional exhaustion; employees' CSR perceptions; job insecurity; organizational identification; workplace deviance.

Evidence Level: 4B

Link: <https://www.frontiersin.org/articles/10.3389/fpubh.2022.1000628/full>

Job Design

This month we explore the effect of working from home on mental wellbeing and job satisfaction, and the potential mediating role of work-family conflict.

Workload and mental well-being of homeworkers: The mediating effects of work-family conflict, sleeping problems, and work engagement

Background: Based on the Conservation of Resources theory, this cross-sectional study investigates the relationship between workload experienced by employees when working at home and their mental well-being. Work-family conflict, sleeping problems, and work engagement are proposed as mediators.

Methods: A sample of 11,501 homeworkers was drawn from the sixth wave of the European Working Condition Survey data set. **Results:** Unlike the expected, the higher the workload, the higher the mental well-being of employees. However, as expected, high workload was correlated with lower well-being when indirect effects through work-family conflict, sleep problems, and work engagement were considered. Similarly, the total effect of workload on mental well-being was negative. **Conclusions:** The study suggests that organizations should pay more attention to the amount of workload experienced by their homeworkers because it may be harmful to their health and well-being.

Zappalà et al. 2022.

Journal of Occupational and Environmental Medicine, vol. 64, no. 10.

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: Workload; mental health; mental wellbeing; work-family conflict; sleeping problems; employee.

Evidence Level: 4B

Link:

https://journals.lww.com/joem/Fulltext/2022/10000/Workload_and_Mental_Well_Being_of_Homeworkers_The.22.aspx

Coping methods and satisfaction with working from home in academic settings during the COVID-19 pandemic

Background: In this paper, we examined how university staff and students coped with challenges related to working or studying from home during the COVID-19 pandemic, and the level of satisfaction with working from home. **Methods:** An online survey was conducted among faculty, staff, and students at universities in 24 countries ($n = 674$). The results show that over 80% of the respondents used multiple coping methods.

Results: Three clusters of coping methods were generated through factor analysis: (1) social and health factor, with focus on personal health and the social surrounding, (2) activity factor, i.e., being busy with work or studies, finding up-to-date information about COVID-19, while thinking about what one could do rather than what one could not do, and (3) public health factor, which meant trusting health authorities while avoiding misinformation from sources such as social media. Furthermore, 56% of the respondents were very or somewhat satisfied with working from home. **Conclusions:** Differences in the methods of coping and satisfaction with working from home highlight the need for employers to prepare for working from home beyond the COVID-19 pandemic.

Munobwa et al. 2022.

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

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

Keywords: Coping strategies; coronavirus; enforced telework; higher education; home confinement; job satisfaction; occupational health; remote work; telecommuting; workplace health.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/19/12669>

Working from home during COVID-19: Does work-family conflict mediate the relationship between workplace characteristics, job satisfaction, and general health?

Background: The aim of the study is to investigate whether work-family conflict and/or family-work conflict mediated the relationship between workplace characteristics and general health and job satisfaction in a sample of workers working from home in a recommended/mandatory context due to COVID-19 measures.

Methods: Data were collected via online questionnaire as part of the Employees Working from Home study. Analyses in this article used data collected at 2 time points 6 months apart, including 965 complete responses from the first questionnaire and 451 complete responses from the second questionnaire.

Results: Relationships between predictor and outcome variables were in the directions expected, and both work-family conflict and family-work conflict mediated these relationships. **Conclusions:** Work-life interaction partly explains the relationship between work characteristics and general health and job satisfaction health in a population undertaking involuntary working from home.

Weale et al. 2022.

Journal of Occupational and Environmental Medicine, vol. 64, no. 10.

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: Remote work; family conflict; COVID-19; working from home; job satisfaction.

Evidence Level: 4A

Link:

https://journals.lww.com/joem/Fulltext/2022/10000/Working_From_Home_During_COVID_19_Does.6.aspx

Shift Work

This month we explore the risk of metabolic syndrome, unhealthy food choices, and the feasibility of time restricted eating amongst shift workers

Feasibility of time-restricted eating and impacts on cardiometabolic health in 24-h shift workers: The Healthy Heroes randomized control trial

Background: Over a quarter of the workforce in industrialized countries does shift work, which increases the risk for cardiometabolic disease. Yet shift workers are often excluded from lifestyle intervention studies to reduce this risk. **Methods and Results:** In a randomized control trial with 137 firefighters who work 24-h shifts (23-59 years old, 9% female), 12 weeks of 10-h time-restricted eating (TRE) was feasible, with TRE participants decreasing their eating window (baseline, mean 14.13 h, 95% CI 13.78-14.47 h; intervention, 11.13 h, 95% CI 10.73-11.54 h, $p = 3.29E-17$) with no adverse effects, and improved quality of life assessed via SF-36 (ClinicalTrials.gov: [NCT03533023](https://clinicaltrials.gov/ct2/show/study?term=NCT03533023)). Compared to the standard of care (SOC) arm, TRE significantly decreased VLDL particle size. In participants with elevated cardiometabolic risks at baseline, there were significant reductions in TRE compared to SOC in glycated hemoglobin A1C and diastolic blood pressure. **Conclusion:** For individuals working a 24-h shift schedule, TRE is feasible and can improve cardiometabolic health, especially for individuals with increased risk.

Manoogian et al. 2022.

Cell Metabolism, vol. 34, no. 10.

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

Keywords: TRF; circadian; diabetes; firefighters; hypertension; intermittent fasting; quality of life; shift work; sleep; time-restricted eating.

Evidence Level: 2B

Link: [https://linkinghub.elsevier.com/retrieve/pii/S1550-4131\(22\)00361-8](https://linkinghub.elsevier.com/retrieve/pii/S1550-4131(22)00361-8)

Shift work and the risk for metabolic syndrome among healthcare workers: A systematic review and meta-analysis

Background: Shift work, defined as work occurring outside typical daytime working hours, is associated with an increased risk for metabolic syndrome (MetS) due to several biological and environmental changes. The MetS refers to the clustering of several known cardiovascular risk factors, including insulin resistance, obesity, dyslipidemia, and hypertension. **Methods:** This systematic review aims to evaluate the literature on the association between shift work and the risk of MetS in employees of the health sector. A systematic search was conducted in PubMed, Web of Science, and Scopus databases using appropriate keywords for studies published before September 1, 2021. Eligible studies were those that compared the prevalence of MetS between day and shift healthcare workers; had a cross-sectional, case-control, or cohort study design; provided sufficient data for calculating odds ratios or relative risks with 95% confidence intervals; and articles in English. The Joanna Briggs Institute prevalence critical appraisal tool was used for quality analysis. Risk for MetS and related measures of effect size were retrieved from studies for meta-analysis.

Results: Twelve studies met the criteria for inclusion in the review and meta-analysis. Sample sizes ranged from 42 to 738, and the age range of subjects was between 18 and 65 years. Ten studies demonstrated high methodological quality, while two studies were of average quality. Ten out of 12 studies in the review demonstrated a higher risk in shift workers for developing MetS than day workers. The pooled OR of MetS in shift workers based on 12 studies was 2.17 (95% CI = 1.31-3.60, P = 0.003; I² = 82%, P < 0.001).

Conclusions: Shift workers exhibited more than a twofold increase in the chance of developing MetS in comparison with day workers.

Sooriyaarachchi et al. 2022.

Obesity Reviews, vol. 23, no. 10.

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

Keywords: Day work; healthcare workers; metabolic syndrome; shift work.

Evidence Level: 1A

Link: <https://onlinelibrary.wiley.com/doi/10.1111/obr.13489>

Unhealthy food choices among healthcare shift workers: A cross-sectional study

Background: Shift healthcare workers are a group particularly exposed to an increased risk of poor eating habits and are affected by many diseases. The aim of the study was to evaluate the dietary patterns (DPs), including the Polish-adapted Mediterranean Diet (Polish-aMED[®]) score, and dietary fat intake in association with the shift work of healthcare workers. **Methods:** This cross-sectional study involved 445 healthcare workers from the West Pomeranian in Poland. Dietary data were collected using an FFQ-6[®]. A posteriori DPs were derived with a Principal Component Analysis (PCA). The Polish-aMED[®] score and the individual's percentage of energy from dietary fat (Pfat) were calculated. **Results:** Healthcare shift work compared to the daily work was associated with approximately 2-times higher odds of adherence to the 'Meat/fats/alcohol/fish' DP in the upper tertile (OR: 2.38; 95% CI: 1.27-4.47; p < 0.01) and higher Pfat > 35% of total energy intake (OR: 1.73; 95% CI: 1.06-2.83; p < 0.05). Healthcare shift work compared to the daily work was associated with approximately 50% lower odds of adherence to the 'Pro-healthy' DP in the middle tertile (OR: 0.48; 95% CI: 0.26-0.89; p < 0.05) and a higher level of the Polish-aMED[®] score (OR: 0.57; 95% CI: 0.33-0.98; p < 0.05), as well as lower odds of the constants of mealtime (OR: 0.54; 95% CI: 0.33-0.89; p < 0.05). **Conclusions:** The obtained findings highlight the unhealthy food choices among shift healthcare workers. Thus, to avoid the negative health consequences, there is a need for nutritional education for healthcare workers, especially those working shifts.

Wolska et al. 2022.

Nutrients, vol. 14, no. 20.

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

Keywords: Mediterranean diet; dietary habits; dietary patterns; fat intake; healthcare; shift workers.

Evidence Level: 4B

Link: <https://www.mdpi.com/2072-6643/14/20/4327>

Management and Leadership

This month we explore the relationship between management behaviour and office type, job performance, occupational stress and health-related early exit from employment

Changing the office design to activity-based flexible offices: A longitudinal study of how managers' leadership behaviours are perceived

Background: This longitudinal study examines the impact of office type on employees' perception of managers' leadership behaviours, which is an unexplored area. The expanding research related to activity-based flexible offices (AFOs) has mainly focused on employees' working conditions and health outcomes, not on the changes in leadership behaviours when moving from traditional offices to AFOs. **Methods:** Office workers (n = 261) from five office sites within a large Swedish government agency were included in a controlled study of a natural intervention. At four sites, traditional offices were replaced by AFOs, while workers at one site with no relocation acted as the control. The same employees rated different leadership behaviours in a web-based questionnaire at baseline and at one follow-up. **Results:** The analyses showed

that relocations from cell and open-plan offices to AFOs were clearly related to a decrease in the perception of relation-oriented leadership behaviours. However, coming from open-plan offices to AFOs also decreased the perception of the other leadership dimensions. As expected, the control group was stable over time in their perceptions. **Conclusions:** This emphasises the need for organisations to provide managers with prerequisites so they can keep up with behaviours that support employees' performance and health when office designs and ways of working are changed.

Larsson et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: ABW; AFO; activity-based working; behaviour; flexible work; management; open-plan office.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/20/13557>

Influences of boundary-spanning leadership on job performance: A moderated mediating role of job crafting and positive psychological capital

Background: Due to the pursuit of a flexible organization, the interest in internal as well as external boundary management has increased as a key to achieve high performance. **Methods:** This study identified boundary-spanning leadership (BSL) as a critical factor enhancing job crafting and job performance of subordinates. By examining the mediating effect of job crafting and the moderating effect of positive psychological capital (PsyCap), the authors aimed to present the effects of BSL assimilating job resources, such as external information and knowledge into organization. **Results:** Data were collected from 238 workers of 11 companies using questionnaires in South Korea to test the moderated mediation model. The results of regression analysis using LISREL and SPSS, revealed that the manager's BSL provoked job crafting, which in turn achieved job performance of subordinates. Moreover, PsyCap positively moderated the effect of BSL on job crafting of subordinates. **Conclusions:** The findings suggested, therefore, in order to maximize the positive effects of BSL in an organization, it should also be necessary to understand and boost PsyCap along with enhancing job crafting.

Xue et al. 2022.

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

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

Keywords: Boundary-spanning leadership; job crafting; job performance; positive psychological capital.

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/19/19/12725>

The contagious leader: A panel study on occupational stress transfer in a large Danish municipality

Background: Occupational stress has immense economic and health-related consequences for individuals, organizations, and societies. In this context, the question of whether and how stress among managers transmits to their subordinates is highly interesting, yet not profoundly researched. **Methods:** This study aims to empirically investigate the effect of manager occupational stress on the development of subordinate stress and for how long such effects last in time. We exploit a unique panel dataset based on three different surveys among employees from a large Danish municipality, covering 5,688 employees and their 473 immediate managers between 2016 and 2020. We analyze this data using a fixed effects estimator with clustered robust standard errors, allowing us to significantly reduce potential endogeneity issues. **Results:** The study shows that managers do in fact 'transmit' stress onto their employees, that the relationship is detectable a full year after the initial transmission of stress occurred, and that such an effect fades within additional two years. **Conclusions:** Our study serves to emphasize the great importance of the psychosocial wellbeing of managers as 'nerve centers' for entire job teams and urges organizations to treat stress among personnel on management levels with a high degree of concern.

Bonnesen 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 stress; manager stress; occupational stress; panel study; psychosocial work environment; public management; stress contagion; stress spill-over; well-being.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-14179-5>

Leadership behaviours and health-related early exit from employment: A prospective cohort study of 55 364 employees

Background: Absence of certain leadership behaviours, such as lack of feedback, recognition and involvement in employee development, has been associated with long-term sickness absence. We tested the hypothesis that absence of eight specific behaviours predicts health-related early exit from employment, and investigated differential effects in subgroups to guide future preventive initiatives.

Methods: Using Cox-proportional hazard modelling, we examined the prospective association between absence of leadership behaviours and health-related early exit from employment in a sample of 55 364 employees during 4.3 years follow-up. Leadership behaviours were measured by employee ratings in national surveys from 2012 to 2016. Exit from employment included disability pension and related measures of health-related early exit, retrieved from a national registry. **Results:** We identified 510 cases of health-related early exit from employment during follow-up. A high level of absence of leadership behaviours, was associated with an increased risk of exit from employment (hazard ratio: 1.57, 95% CI: 1.31; 1.89). Subgroup analyses showed that the association between absence of leadership behaviours and exit from employment was similar for women and men and across age groups. The association was stronger for employees with high level of education than for employees with medium/low education, and the association was not observed among employees with a prevalent depressive disorder.

Conclusions: Absence of the eight leadership behaviours is a risk factor for health-related early exit from employment in the Danish workforce. More studies are needed to confirm the results.

Sorensen et al. 2022.

European Journal of Public Health, vol. 32, no. 5.

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

Keywords: Leadership; employment; development; sickness; absence.

Evidence Level: 4B

Link: <https://academic.oup.com/eurpub/article/32/5/709/6675534?login=true>

Work Ability

This month we explore the work ability related to fatigue and cognitive dysfunction, healthy lifestyle changes and cardiorespiratory fitness

Fatigue and cognitive dysfunction are associated with occupational status in post-COVID syndrome

Background: Post-COVID syndrome (PCS) is a medical condition characterized by the persistence of a wide range of symptoms after acute infection by SARS-CoV-2. The work capacity consequences of this disorder have scarcely been studied. **Methods:** We aimed to analyze the factors associated with occupational status in patients with PCS. This cross-sectional study involved 77 patients with PCS on active work before SARS-CoV-2 infection. Patients were evaluated 20.71 ± 6.50 months after clinical onset. We conducted a survey on occupational activity and cognitive and clinical symptoms. The association between occupational activity and fatigue, depression, anxiety, sleep quality, and cognitive testing was analyzed. **Results:** Thirty-eight (49.4%) patients were working, and thirty-nine (50.6%) patients were not. Of those not working at the moment of the assessment, 36 (92.3%) patients were on sick leave. In 63 patients (81.8% of the sample), sick leave was needed at some point due to PCS. The mean duration of sick leave was 12.07 ± 8.07 months. According to the patient's perspective, the most disabling symptoms were cognitive complaints (46.8%) and fatigue (31.2%). Not working at the moment of the assessment was associated with higher levels of fatigue and lower cognitive performance in the Stroop test. No association was found between occupational status with depression and anxiety questionnaires. **Conclusions:** Our study found an influence of PCS on work capacity. Fatigue and cognitive issues were the most frequent symptoms associated with loss of work capacity.

Delgado-Alonso et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: COVID-19; cognition; depression; fatigue; occupational status; post-COVID syndrome.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/20/13368>

The effect of healthy lifestyle changes on work ability and mental health symptoms: A randomized controlled trial

Background: The effects of lifestyle interventions on the prevention of a decline in work ability and mental health are not well known. The aim of this randomized controlled trial was to examine the effects of healthy lifestyle changes on work ability, sleep, and mental health. **Methods:** Workers aged 18-65 years, who were free from cardiovascular diseases, diabetes, and malignant diseases, and did not use medication for obesity or lipids were included (N = 319). Based on their cholesterol balance, participants were classified into medium-risk and high-risk groups and were randomized into four arms: group lifestyle coaching (N = 107), individual lifestyle coaching (N = 53), the control group for group coaching (N = 106), and the control group for individual coaching (N = 53). The intervention groups received eight sessions of mostly remote coaching for 8 weeks about healthy diet, physical activity, other lifestyle habits, and sources/management of stress and sleep problems, and the control groups received no intervention. In individual coaching, the coach focused more on individual problem solving and the possibilities for motivation and change. The intention-to-treat principle was applied, and missing data on the outcomes were imputed using multiple imputation. **Results:** After the completion of the intervention, the risk of depressive symptoms was lower by 53% (95% CI 1-77%) in participants who received individual lifestyle coaching compared with the control group. The intervention had no beneficial effects on anxiety, work ability, sleep duration, or daily stress. In subgroup analyses, group lifestyle coaching had beneficial effects on depressive symptoms and work ability in participants with less tight schedules or less stretching work, whereas individual lifestyle coaching lowered the risk of depressive symptoms in those with fewer overlapping jobs, less tight schedules, or less stretching work. **Conclusion:** Short but intensive remote lifestyle coaching can reduce depressive symptoms and improve work ability, and time-related resources at work may improve mental health in the context of individual lifestyle intervention. However, further randomized controlled trials are needed to confirm the findings.

Shiri et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Anxiety; depression; diet; exercise; sleep; work ability.

Evidence Level: 2A

Link: <https://www.mdpi.com/1660-4601/19/20/13206>

Cardiorespiratory fitness is associated with sickness absence and work ability

Background: Physical activity may sustain the physical aspect of work ability despite health problems such as musculoskeletal disorders and anxiety, which are the most prevalent work-related health problem in Europe. **Aims:** To evaluate the association of Finnish municipal workers' accelerometer-measured physical activity, sedentary behaviour, and cardiorespiratory and muscular fitness with their sickness absence levels, perceived work ability and health-related quality of life. **Methods:** In connection with a randomized controlled trial recruiting 185 municipal workers, the authors performed baseline data analysis utilizing quantile regression to examine relationships between the outcome variables (all-cause sickness absence for 6 months, perceived work ability and health-related quality of life) and cardiorespiratory fitness, muscular fitness, and physical activity, and sedentary behaviour. All results were adjusted for age, sex and education level. **Results:** The median duration of all-cause sickness absence over the preceding 6 months was lowest among participants with high cardiorespiratory fitness relative to the lowest tertile (2.0 versus 6.0 days; $P < 0.05$), and the highest perceived work ability was found among those with high or moderate cardiorespiratory fitness as compared to the lowest tertile (8.0 versus 7.0; $P < 0.001$). Moderate-to-vigorous physical activity correlated positively with the physical component of health-related quality of life ($P < 0.01$) and with a high cardiorespiratory-fitness level ($P < 0.05$). **Conclusions:** High cardiorespiratory

fitness was associated with decreased all-cause sickness absence days and improved work ability among municipal workers.

Kolu et al. 2022.

Occupational Medicine, vol. 72, no. 7.

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

Keywords: Cardiorespiratory fitness; sickness; absence; work ability; musculoskeletal disorders.

Evidence Level: 2B

Link: <https://academic.oup.com/occmed/article/72/7/478/6663782>

Adapting to the Future of Work

Aging Workforce

This month we explore the issues of ergonomic and individual risk factors for musculoskeletal pain and factors affecting work ability and influencing early retirement decisions in the aging workforce

Factors affecting work ability and influencing early retirement decisions of older employees: An attempt to integrate the existing approaches

Background and Methods: The article has several objectives. First, it aims to discuss, based on the international literature analysis, theoretical models and factors influencing early retirement decisions, and limiting work ability and employability of older people. Second, the concept of (and the factors related to) work ability as well as the role of age management in improving employability and sustaining work activity of older adults are analyzed against the backdrop of the Polish context. Cultural (ageism) and organizational (e.g., a lack of appropriate age management in companies) factors influencing work activity in the oldest age groups are taken into account. Third, the authors present some solutions and recommendations coming from the international Participation To Healthy Workplaces And inclusive Strategies in the Work Sector (PATHWAYS) project. Finally, theoretical models, concepts and solutions are integrated into a model elucidating the conditions (cultural, social, organizational, individual) influencing work ability of older adults. **Conclusions:** The model aims to take into account theories and factors identified in the literature review and grouped into several categories. The analysis highlights the role of appropriate age management in companies in the process of sustaining work ability of older employees.

Woźniak et al. 2022.

International Journal of Occupational Medicine and Environmental Health, vol. 35, no. 5.

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

Keywords: Ageism; early exit from work; employability; pull factors; push factors; work ability.

Evidence Level: 5B

Link: <http://ijomeh.eu/Factors-affecting-work-ability-and-influencing-early-retirement-decisions-of-older,147594,0,2.html>

Ergonomic and individual risk factors for musculoskeletal pain in the ageing workforce

Background: The present study aimed to investigate the possible association between specific ergonomic and individual risk factors and musculoskeletal pain (MSP) in the back, shoulder, hip and knee region in workers aged 50-65y. **Methods:** The study was a population based cross-sectional survey. The study population comprised citizens born between 1952-1966, living in Esbjerg municipality, Denmark, ultimo 2016 (n = 23,463). A questionnaire was sent electronically or by mail. The analysis included the working population only. A multivariate logistic regression was used for each of the following dependent variables; musculoskeletal pain for the past 3 months in the back, shoulder, hip and knee, where independent variables included ergonomic exposure, age, sex, body mass index (BMI) and leisure time physical activity (LTPA). **Results:** The overall response rate was 58% and the data of individuals at work (n = 9,263) demonstrated several ergonomic exposures with increased odds for pain in specific regions. Exposure to back twisted or bend, squatting or lying on knees and to carrying or lifting were associated with musculoskeletal pain in the back, whereas exposure to back twisted or bend, arms above shoulder and

repeated arm movement were associated with pain in the shoulder. Exposure to back twisted or bend, repeated arm movement, squatting or lying on knees and to carrying or lifting were associated with musculoskeletal pain in the hip. Important individual risk factors were also identified. Increasing age was significantly associated with increased pain in the hip but associated with less risk for pain in the back and shoulder. Males had higher odds for pain in the back and knee compared to females but lower odds for pain in the hip. BMI was particularly important for knee pain. The level of LTPA did not have an important association with MSP in any region. **Conclusion:** There is a significant positive association between ergonomic exposures and musculoskeletal pain, which were specific for the back, shoulder, hip and knee. In addition, the data demonstrated a differential association with age, sex and BMI. This needs to be considered for the treatment and classification of musculoskeletal pain and for future preventive initiatives.

Nygaard 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: Ageing; ergonomic exposure; musculoskeletal pain; work-related posture.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-14386-0>

Guiding and Supporting Mental Health and Wellbeing

Mental Health

This month we explore a range of issues associated with mental health including the effect of work-life conflict, the effect of work-related stressors among LGBTQ workers, the impact of traumatic experiences and workplace benefits amongst public health workers, the association with the amount of weekly alcohol consumption and perspectives on hiring and working with people with mental health conditions. In other studies the relationship between depression and internet use, sleep disturbances and policies and interventions to prevent sexual harassment in the workplace are explored. In the area of mental distress we explore the contribution of respiratory and hearing protection use, the relationship to different occupational groups and industries, and the prevalence of PTSD in healthcare workers following the first SARS-CoV epidemic of 2003

Employer and co-worker perspectives on hiring and working with people with mental health conditions

Background: The purpose of this study was to understand perspectives towards hiring and working with people with mental health conditions (PMHC). **Methods:** Semi-structured interviews with 25 employers and 20 co-workers were carried out. Thematic analysis was used to analyse the data. **Results:** The barriers to hiring and working with PMHC identified through the interviews were concerns about safety, incompetence, PMHC not being able to get along with others, requiring more training and supervision as well as medical costs and reputational risks to the hiring organisation. Employers and co-workers suggested that improving mental health literacy of staff, pairing the PMHC with trained work buddies, having access to mental professionals when needed, and providing incentives for hiring PMHC such as tax rebates are likely to improve attitudes towards hiring and working with PMHC. Their suggestions for the additional supports required should be considered when developing initiatives to promote inclusivity of PMHC in workplaces.

Shahwan et al. 2022.

Community and Mental Health Journal, vol. 58, no. 7.

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

Keywords: Employment; mental illness; stigma; work.

Evidence Level: 5B

Link: <https://link.springer.com/article/10.1007/s10597-021-00934-2>

Onset of work-life conflict increases risk of subsequent psychological distress in the Norwegian working population

Background: We aimed to assess whether the onset of work-life conflict is associated with a risk of subsequent onset of psychological distress. **Methods:** Respondents from a randomly drawn cohort of the general Norwegian working population were interviewed in 2009 (T1), 2013 (T2), and 2016 (T3) (gross sample n = 13,803). **Results:** Participants reporting frequent work-life conflict at T1 and/or psychological distress (five-item Hopkins Symptom Checklist mean score ≥ 2) at T2 were excluded to establish a design that allowed us to study the effect of the onset of work-life conflict at T2 on psychological distress at T3. Logistic regression analysis showed that the onset of frequent work-life conflict more than doubled the risk of the onset of psychological distress at T3 (OR = 2.55; 95% CI 1.44-4.51). The analysis of the association between occasional work-life conflict and psychological distress was not conclusive (OR = 1.21; 95% CI 0.77-1.90). No differential effects of sex were observed (log likelihood ratio = 483.7, p = 0.92). The calculated population attributable risk (PAR) suggests that 12.3% (95% CI 2.84-22.9%) of psychological distress onset could be attributed to frequent work-life conflict. **Conclusion:** In conclusion, our results suggest that the onset of frequent work-life conflict has a direct effect on the future risk of developing symptoms of psychological distress in both male and female workers.

Marti et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Anxiety; depression; mental health; occupational health; work-family conflict; work-life balance.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/20/13292>

Mediation effect of musculoskeletal pain on burnout: Sex-related differences

Background: Burnout occurs when people are exposed to emotionally demanding work situations over an extended period, resulting in physical, emotional, and mental exhaustion. **Methods:** This study adopted the personal burnout (PB) and work-related burnout (WB) scales of the Copenhagen Burnout Inventory to measure burnout levels. Musculoskeletal (MS) pain is one factor influencing burnout. Previous studies have demonstrated that male and female hormones may contribute to sex-related differences in MS pain. This was an observational and cross-sectional study conducted at a medical-university-affiliated hospital in Taichung, Taiwan, in 2021. Data were collected for demographic characteristics, family structure, living habits, occupation, physical health, Nordic Musculoskeletal Questionnaire score, and Copenhagen Burnout Inventory score. **Results:** Of the 2531 questionnaires that were distributed, 1615 (63.81%) valid questionnaires remained after those with missing data were excluded. The results demonstrated neck and shoulder pain (NBSP) is commonly associated with burnout among healthcare workers, with a higher prevalence among women than among men. **Conclusions:** With confounders being controlled for, women were found to experience substantially higher levels of personal and work-related burnout than men did. NBSP is a mediating factor; therefore, it is a key reason why women are more likely than men to experience burnout.

Chen et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Burnout; mediating factor; musculoskeletal pain; sex-related differences; women.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/19/12872>

The role of internet use in the relationship between occupational status and depression

Background: The emerging information and communications technology (ICT) and society 5.0 have integrated digital innovation and imaginative creativity to solve social problems and create social value in an aging society. Especially in China, the penetration rate of internet use has become more prominent. Nevertheless, the role of internet use in the relationship between occupational status and depression remains unknown. The purpose of this study was to estimate how internet use moderates the relationship between occupational status and depression in a sample of older adults in China. **Methods:** A cross-sectional design was used to assess the relationship between occupational status, internet use and depression. This study employed data from the Chinese General Social Survey (CGSS) conducted in 2017.

The full sample size of this study is 2,403. OLS regression was adopted to explore the correlation between occupational status and depression and the moderating role of internet use. Meanwhile, a heterogeneity analysis based on residence registration was implemented to explore the difference between rural and urban sample groups. **Results:** The findings suggested that higher occupational status was related to lower depression level. By playing an inhibitory moderating role between the association of occupational status and depression, internet use and occupational status formed a substituting effect. Meanwhile, the above moderating effect was only significant in urban group and insignificant in rural group. Besides, being male and having higher social class were significantly and negatively correlated with depression. **Conclusion:** This study began with the theory of social stratification and social mobility, added the theory of social capital, constructed an analytical framework of regulatory effect, put forward two basic assumptions, selected measurement indicators taking into account Chinese cultural factors, and conducted empirical tests using authoritative statistical software and national representative data, providing a new theoretical contribution to our understanding of the impact of occupational status and depression in developing countries.

Zhang 2022.

PLoS One, vol. 17, no. 10.

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

Keywords: Depression; occupational status; internet use; communications.

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0272611>

The significant association between quick return and depressive symptoms and sleep disturbances in paid workers: A nationwide survey

Background: Although many studies have examined the association between shift work and depression or insomnia, few studies have examined the relationship between quick return (QR) to work and depressive symptoms, regardless of shift work. Thus, in this study, we aimed to assess the association between depressive symptoms (DS)/sleep disturbances (SDs) and QR. **Methods:** Data from the 6th Korean Working Conditions Survey (2020) were used for this study. Paid workers aged between 20 and 65 years were included. DS were defined using the World Health Organization Well-Being Index (WHO-5) with a cut-off 50, and SD was defined as the occurrence of the following symptoms several times per month: difficulty in falling asleep, waking up in the middle of the night, or feeling tired even after waking up. QR was defined as "at least one case where the working interval between leaving work and the next day's work was < 11 h in the past month." Multivariable logistic regression was performed to estimate the adjusted odd ratios (aORs) and 95% confidence intervals (CIs). Mediation analysis was conducted to examine whether SD was a significant mediator in the association between QR and DS. **Results:** Among the 27,554 participants, DS occurred in 8,277 patients, while SD occurred in 6,264 patients. The aORs (95% CIs) of DS and SD by QR were 2.01 (1.78-2.27) and 3.24 (2.87-3.66), respectively, after adjusting for age, gender, income, education, working hours, job status, working duration, region, shift work, and occupation. SD was a significant mediator in the association between QR and DS. **Conclusion:** QR is significantly associated with DS or SD regardless of demographic factors and the working environment. The significant relationship between QR and DS may be mediated by SD.

Yun et al. 2022.

Frontiers in Public Health, vol 10.

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

Keywords: Depressive symptoms; mediation; paid workers; quick return; sleep disturbances.

Evidence Level: 4B

Link: <https://www.frontiersin.org/articles/10.3389/fpubh.2022.990276/full>

Work-related stressors and mental health among LGBTQ workers: Results from a cross-sectional survey

Background: Lesbian, gay, bisexual, transgender, and queer (LGBTQ) individuals experience high rates of adverse mental health outcomes due to the stressors they experience in families, communities, and society more broadly. Work and workplaces have the potential to influence these outcomes given their ability to amplify minority stress, and their ability to influence social and economic wellbeing in this already marginalized population. This study aims to identify how sociodemographic characteristics and

characteristics of work, including degree of precarity, industry and perceived workplace support for LGBTQ people, influence self-reported mental health among LGBTQ people in two Canadian cities. **Methods:** Self-identified LGBTQ workers ≥ 16 years of age ($n = 531$) in Sudbury and Windsor, Ontario, Canada were given an online survey between July 6 and December 2, 2018. Multivariate ordinal logistic regression was used to calculate odds ratios (OR) to evaluate differences in gender identity, age, income, industry, social precarity, work environment, and substance use among workers who self-reported very poor, poor, or neutral mental health, compared with a referent group that self-reported good or very good mental health on a five-point Likert scale about general mental health. **Results:** LGBTQ workers with poor or neutral mental health had greater odds of: being cisgender women or trans compared with being cisgender men; being aged < 35 years compared with ≥ 35 years; working in low-wage service sectors compared with blue collar jobs; earning $< \$20,000/\text{year}$ compared with $\geq \$20,000/\text{year}$; working in a non-standard work situation or being unemployed compared with working in full-time permanent employment; feeling often or always unable to schedule time with friends due to work; feeling unsure or negative about their work environment; and using substances to cope with work. **Conclusions:** Both precarious work and unsupportive work environments contribute to poor mental health among LGBTQ people. These factors are compounded for trans workers who face poorer mental health than cis-LGBTQ workers in similar environments.

Owens et al. 2022.

PLoS One, vol. 17, no. 10.

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

Keywords: Mental health; stressors; LGBTQ.

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0275771>

The contribution of respiratory and hearing protection use to psychological distress in the workplace: A scoping review

Background: Workers from various industries use personal protective equipment (PPE) including masks, respirators, and hearing protection to reduce their exposures to workplace hazards. Many studies have evaluated the physiological impacts of PPE use, but few have assessed the psychological impacts. The aim of the present study was to carry out a scoping review to compile existing evidence and determine the extent of knowledge on workplace mask, respirator or hearing protection use as a psychosocial hazard (stressor) that could result in a stress response and potentially lead to psychological injury. **Methods:** The scoping review followed recognized methods and was conducted using Ovid Emcare, PubMed, Sage Journals, ScienceDirect, Scopus, SpringerLink, Google Scholar and preprint databases (OSF Preprints and medRxiv). Articles on the stressors associated with the use of masks, respirators, and hearing protection were included. The extracted data included author(s) name, year of publication, title of article, study design, population data, stressors assessed, and key findings. **Results:** We retrieved 650 articles after removal of duplicates, of which 26 were deemed eligible for inclusion for review. Identified factors associated with PPE use that could potentially create a stress response were identified: communication impacts, physical impacts, psychological illness symptoms, cognitive impacts, and perceived PPE-related impacts. Evidence for respirators suggest that there may be psychological injury associated with their use. However, hearing protection appears to have a protective effect in reducing psychological symptoms such as anxiety, depression, and aggression. **Conclusions:** Mask or respirator use may lead to an increase in work-related stress. Whereas hearing protection may have protective effects against psychological symptoms and improves speech intelligibility. More research is needed to better understand potential psychosocial impacts of mask, respirator and/or hearing protection use.

Leung et al. 2022.

International Archives of Occupational and Environmental Health, vol. 95, no. 8.

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

Keywords: Hearing protection; masks; mental health; respirators; stress.

Evidence Level: 6A

Link: <https://link.springer.com/article/10.1007/s00420-022-01863-7>

Systematic review of policies and interventions to prevent sexual harassment in the workplace in order to prevent depression

Background: Sexual harassment in the workplace (SHWP) is highly prevalent and has a negative impact, including depression, on its victims, as well as a negative economic impact resulting from absenteeism and low productivity at work. This paper aims to outline the available evidence regarding the prevention of depressive symptoms among workers through policies and interventions that are effective in preventing SHWP. **Methods:** We conducted two systematic reviews. The first focused on the association of depression and SHWP, and the second on policies and interventions to prevent SHWP. We conducted a meta-analysis and a narrative synthesis, respectively. We identified 1831 and 6107 articles for the first and second review. After screening, 24 and 16 articles were included, respectively. **Results:** Meta-analysis results show a prevalence of depression of 26%, as well as a 2.69 increased risk of depression among workers who experience SHWP. Variables such as number of harassment experiences and exposure to harassment from coworkers and other people increase this risk. **Conclusions:** There is limited evidence regarding the effectiveness of policies and training to prevent SHWP, mostly focused on improvements in workers' knowledge and attitudes about SHWP. However, there is no available evidence regarding its potential impact on preventing depression.

Diez-Canseco et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Depression; sexual harassment; systematic review; workplace interventions; workplace policies.

Evidence Level: 1A

Link: <https://www.mdpi.com/1660-4601/19/20/13278>

The impact of traumatic experiences, coping mechanisms, and workplace benefits on the mental health of U.S. public health workers during the COVID-19 pandemic

Background: To evaluate the association between risk factors, mitigating factors, and adverse mental health outcomes among United States public health workers. **Methods:** Cross-sectional online survey data were collected March to April 2021. The survey was distributed to public health workers who worked in a state, tribal, local, or territorial public health department since March 2020. **Results:** In total, 26,174 United States state and local public health workers completed the survey. Feeling isolated was a risk factor for anxiety (PR, 1.84; 95% CI, 1.74-1.95), depression (PR, 1.84; 95% CI, 1.75-1.94), post-traumatic stress disorder (PR, 1.50; 95% CI, 1.43-1.57), and suicidal ideation (PR, 3.23; 95% CI, 2.82-3.69). The ability to take time off was linked to fewer reported symptoms of anxiety (PR, 0.87; 95% CI, 0.83-0.90), depression (PR, 0.86; 95% CI, 0.83-0.89), post-traumatic stress disorder (PR, 0.84; 95% CI, 0.81-0.88), and suicidal ideation (PR, 0.84; 95% CI, 0.77-0.92). **Conclusions:** Since COVID-19 was declared a pandemic, respondents who felt isolated and alone were at an increased risk for adverse mental health outcomes. Findings from this study call for public health organizations to provide their workforce with services and resources to mitigate adverse mental health outcomes.

Kone et al. 2022.

Annals of Epidemiology, vol. 74, no. 66-74.

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: COVID-19 pandemic; Health workforce; Mental health; Occupational health; Public health.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S1047279722001442?via%3Dihub>

Altered mental distress among employees from different occupational groups and industries during the COVID-19 pandemic in Germany

Background.: Mental distress of employees from the financial, public transport, public service, and industrial sector was examined in a cross-sectional study during the second COVID-19 (coronavirus disease 2019) wave in Germany and retrospectively at its beginning. **Methods:** Mental distress in terms of anxiety and depression symptoms was assessed with the Patient Health Questionnaire-4. High and potential occupational SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) infection risk (OSIR) was

defined based on job information from 1545 non-health care workers. **Results:** The risks for more severe mental distress symptoms increased threefold and twofold, respectively, among employees with high and potential OSIR compared with employees without OSIR. Mental distress severity differed by the extent of work-privacy conflicts, perceived job protection, interactions with colleagues, and overcommitment.

Conclusions: Reducing COVID-19 exposure through workplace protective measures, strengthening interactions among colleagues, and supporting employees with work-privacy conflicts could help better protect employees' mental health.

Casjens et al. 2022.

Journal of Occupational and Environmental Medicine, vol. 64, no. 10.

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: Mental distress; employees; COVID-19; Germany.

Evidence Level: 5B

Link:

https://journals.lww.com/joem/Fulltext/2022/10000/Altered_Mental_Distress_Among_Employees_From.10.aspx

Perceived mental health, work, and life stress in association with the amount of weekly alcohol consumption among Canadian adults who have ever drank

Background: Excess alcohol consumption has multifaceted adverse impacts at individual, household, and community levels. The study primarily aims at assessing the role of perceived health and stress in alcohol consumption among adults in Canada who have ever drank. **Methods:** The study was conducted based on a total of 35,928 Canadian adults aged 18 and above who have ever drank, extracted from the 2017-2018 Canadian Community Health Survey (CCHS) data. A mixed-effect Negative Binomial (NB) regression model was used to determine the effects of three key risk factors (perceived mental health, life stress, and work stress) in association with the self-reported number of weekly alcohol consumption, controlling for other variables in the model. **Results:** The study found that regular alcohol consumption among ever drank Canadian adults is high, with the self-reported number of weekly alcohol consumption ranging from 0 to 210. The results of adjusted mixed-effect NB regression showed that the expected mean of alcohol consumption was significantly higher among those with a poorer perception of mental health, higher perceived work, and life stress. Nonsmokers have a much lower mean score of alcohol consumption compared to those who smoke daily. There was a significant interaction between racial background and the three key predictors (perceived mental health, life stress, and work stress). **Conclusion:** Given the reported perceived health and stress significantly impacts alcohol consumption, the findings suggested improving individual/group counseling, and health education focusing on home and work environment to prevent and manage life stressors and drivers to make significant program impacts.

Geda 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: Alcohol; life stress; mental health; work stress.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-14240-3>

Prevalence of post-traumatic stress disorder (PTSD) in healthcare workers following the first SARS-CoV epidemic of 2003: A systematic review and meta-analysis

Background: The world is still in the grip of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic, with putative psychological consequences for healthcare workers (HCWs). Exploring the prevalence of post-traumatic stress disorder (PTSD) during the first SARS-CoV-1 epidemic in 2003 may inform us of the long-term effects of the actual pandemic, as well as putative influencing factors such as contact with the virus, time effects, or the importance of some sociodemographic data. This information may help us develop efficient preventive strategies. **Methods:** Therefore, we conducted a systematic review and meta-analysis on the prevalence of PTSD in HCWs following the SARS-CoV-1 in 2003. PubMed, Embase, Google Scholar, Psycinfo, and Web of Science were searched until September 2022. Random-

effects meta-analyses were stratified by the time of follow-up. **Results:** We included 14 studies: 4842 HCWs (32.0 years old, 84% women). The overall prevalence of PTSD was 14% (95CI 10 to 17%). The prevalence of PTSD was 16% (8 to 24%) during the epidemic, 19% (16 to 22%) within 6 months after the epidemic, and 8% (4 to 13%) more than one year after the end of the epidemic. The longest follow-up was three years after the epidemic, with 10% of HCWs with PTSD. Nevertheless, the prevalence of PTSD was significantly lower more than one year after the end of the epidemic than the first six months after the epidemic (Coefficient - 10.4, 95CI -17.6 to -3.2, $p = 0.007$). **Conclusions:** In conclusion, the prevalence of PTSD in HCWs was high during the first epidemic of SARS-CoV in 2003 and remained high in the long term. The lessons from the SARS-CoV-1 epidemic may help prevent a wave of PTSD following the latest COVID-19 pandemic.

Alberque et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Infection; mental health; occupation; predictive strategy; public health.

Evidence Level: 1A

Link: <https://www.mdpi.com/1660-4601/19/20/13069>

Bullying and Harassment

This month we explore the relationship between workplace bullying and physician-diagnosed physical and mental health, and the Covid-19 pandemic

Victimization and witnessing of workplace bullying and physician-diagnosed physical and mental health and organizational outcomes: A cross-sectional study

Background: Compared to the numerous reports on mental health outcomes of workplace bullying victims, research on organizational outcomes of witnesses and physical health outcomes of victims and witnesses is scarce. Therefore, the purpose of this study was to investigate the relationship between bullying victimization and witnessing and various physical and mental health outcomes and organizational outcomes such as sickness absence, work performance, and job satisfaction. **Methods:** This study used cross-sectional data from a nationally representative, community-based sample of 5,000 Japanese residents aged 20-60. We analyzed data from 1,496 respondents after excluding those not working at the time of the survey and those with missing values. Workplace bullying, psychological distress, physical complaints, and job satisfaction were assessed with the New Brief Job Stress Questionnaire and work performance with the World Health Organization's Health and Work Performance Questionnaire. In addition, subjective health status, physician-diagnosed mental or physical illness, and sickness absence were asked as one item. Hierarchical multiple regression analysis or Poisson regression analysis was conducted to assess the association between victimization/witnessing workplace bullying and health and organizational outcomes. **Results:** Both victimization and witnessing workplace bullying were significantly associated with psychological distress, physical complaints, subjective poor health, physician-diagnosed mental disorders, and job dissatisfaction. Victimization of workplace bullying was further associated with physician-diagnosed respiratory diseases, sickness absence (≥ 7 days), and poor work performance. Victims were absent from work for 4.5 more sick days and had 11.2% lower work performance than non-victims. **Conclusions:** The results showed that both victimization and witnessing workplace bullying were significantly associated with physical and mental outcomes and various organizational outcomes. Organizations should implement further measures to prevent personal and organizational losses due to workplace bullying.

Tsuno et al. 2022.

PLoS One, vol. 17, no. 10.

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

Keywords: Victimization; workplace bullying; physical; mental health.

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0265863>

Workplace mistreatment and health conditions prior and during the COVID-19 in South Korea: A cross-sectional study

Background: This study examined the relationship between workplace mistreatment, including discrimination, abuse, and overworking, and health problems among full-time workers prior to and during the coronavirus disease (COVID-19) outbreak in South Korea. **Methods:** We analyzed data from the 2017 and 2020-2021 Korean Working Conditions Surveys, including the final sample of 44,425 participants. Multiple logistic regression was used to examine the relationship between workplace mistreatment and health problems among workers by gender. Interaction analysis was conducted to establish the association between the COVID-19 pandemic and health problems related to mistreatment. The occupational, demographic, and socioeconomic backgrounds were adjusted. **Results:** We found a significant association between workplace mistreatment and health problems, including headaches, eyestrain, and anxiety. The association increased after the COVID-19 pandemic: "discrimination" (men (OR 2.26, 95% CI 1.93-2.65), women (OR 2.73, 95% CI 2.36-3.17)); abuse (men (OR 5.42, 95% CI 2.87-10.23), women (OR 4.70, 95% CI 3.12-7.08)); and overworking: men (OR 2.36, 95% CI 2.01-2.77), women (OR 3.52, 95% CI 2.68-4.61). The interaction indicates an increased incidence of people having health problems due to workplace mistreatment (OR 1.03, 95% CI 1.00-1.06) during the COVID-19 pandemic. **Conclusion:** Statistically, employees who experience workplace mistreatment have worse health conditions. The COVID-19 pandemic has affected the job environment and increased the association between workplace mistreatment and health problems. To eliminate the health problems related to workplace mistreatment, it is necessary to address the impact of the COVID-19 pandemic on work and employee health conditions.

Nerobkova et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Health conditions; working condition survey; workplace abuse; workplace discrimination; workplace mistreatment.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/20/12992>

Psychosocial Issues

This month we explore the effect of family-friendly policies, motivating and economic factors at work, interacting with furry co-workers and a web-based stress management intervention on psychosocial work environment. In Covid-19 related research the effect of employees' personality traits and needs' frustration, and the work-related stressors, psychological distress, and absenteeism in health care during the pandemic are explored

Family-friendly policies: Extrapolating a pathway towards better work attitudes and work behaviors in Hong Kong

Background: The need for family-friendly policies to balance work and life demands is growing. Many studies have addressed how family-friendly policies relate to a variety of employees' work attitudes and behavioral outcomes, but not how they (positively or negatively) affect them, especially the affective components of family-friendly policies that provide "felt" support to an employee. To fill this gap, this study adopts a moderated mediating mechanism to analyze how affective components of family-friendly policies impact employees' attitudes and behaviors through signaling and social exchange theory. We examined how this impact is mediated by factors such as work-life conflict, perceived organizational support, and control over working hours, as well as whether having a supportive supervisor moderates the mediated effect through further limiting the degree of work-life conflict or strengthening control over working hours. **Methods:** Data were collected through a survey with 401 employee-supervisor dyads from organizations in Hong Kong. **Results:** We found that family-friendly policies do not necessarily affect work attitude and behavior, but they work through the sequential mediators of having more control over working hours and perceived organizational support. The role of supportive supervisors is also significant, in that they are likely to be key in molding the organizational environment for the gradual provision and uptake of family-friendly policies. **Conclusions:** The results of this study contribute to the development of signaling and

social exchange theory and have theoretical implications for supervisors regarding them utilizing their position to improve employee work attitudes and behavioral outcomes.

Vyas et al. 2022.

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

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

Keywords: Family-friendly policies; mediator; supervisory family support; work attitude and behavior.

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/19/19/12575>

Burnout and quality of work life among municipal workers: Do motivating and economic factors play a mediating role?

Background: This study analyzes the relationship between burnout and quality of work life among municipal workers subjected to higher levels of stress and emotional exhaustion, impacting their occupational health in the context of the COVID-19 pandemic. **Methods:** With a sample of 459 municipal workers, the relationship between burnout and quality of work life is tested by considering the isolated mediating effect of the feeling of contributing to productivity and the combined effects of two mediators representing the feeling of contributing to productivity and receiving an appropriate salary. **Results:** The main findings include a negative association between the three dimensions of burnout: emotional exhaustion, feelings of cynicism, and a sense of being less effective, and the mediators: contribution to productivity and appropriate salary. Also detected was an important mediating role associated with the effects of not feeling contributive at work, as well as not being well paid, on the relation between the burnout syndrome dimension of low effectiveness and quality of work life. **Conclusions:** For future action by public authorities and public managers, the need is highlighted to create innovative human resource management frameworks and flexible work organization, with remuneration plans based on productivity goals and aimed at an improved balance between personal life and work.

Pereira et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Burnout; occupational health; public sector; quality of work life; well-being.

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/19/20/13035>

The furr-recovery method: interacting with furry co-workers during work time is a micro-break that recovers workers' regulatory resources and contributes to their performance

Background: Drawing on the conservation of resources theory and the recovery step model our research expands on a cognitive (regulatory resources) mechanism that links human-animal interactions and employee performance. **Methods:** This study aimed to explore whether daily human-animal interactions during worktime would be conceived as a daily-recovery process that restores the individual's daily regulatory resources and, as a result, improves daily adaptive and task performance. To test this, a daily diary study during 10 working days, with 105 teleworkers was performed ($N = 105 \times 10 = 1050$). **Results:** Multilevel results demonstrated that daily interactions between human and their pets served to recover their daily regulatory resources that, in turn, improved daily task-and-adaptive performance. **Conclusions:** This research not only expands our theoretical understanding of regulatory resources as a cognitive mechanism that links human-animal interactions to employee effectiveness but also offers practical implications by highlighting the recovery role of interacting with pets during the working day, as a way to restore resources needed to be more effective at work.

Junça-Silva 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Human-animal interactions; micro-breaks; performance; pets; recovery.

Evidence Level: 4A

Link: <https://www.mdpi.com/1660-4601/19/20/13701>

Employees' personality traits and needs' frustration predicts stress overload during the COVID-19 pandemic

Background: This study aimed at identifying significant associations between stress, personality traits, and basic psychological needs' satisfaction and frustration. **Methods:** In the study, a simple random sample consisted of 245 employees (mean age = 39.6; SD = 10.82). 138 (57.5%) employees worked in the public sector, and 102 (42.5%) employees worked in the private sector. **Results:** This study found no statistically significant differences between the private and public sector employees in the stress overload. Private sector employees demonstrated higher autonomy and relatedness satisfaction, while public sector employees demonstrated higher autonomy frustration. Public sector employees demonstrated higher scores on agreeableness and conscientiousness, but no significant differences between public and private sectors were found comparing the scores on extraversion, neuroticism, and open-mindedness. **Conclusions:** The SEM identified some significant associations between neuroticism, unsatisfied needs, and stress overload; conscientiousness, unsatisfied needs, and stress overload; basic psychological needs' satisfaction and four personality traits, namely, extraversion, agreeableness, conscientiousness, and open-mindedness.

Dirzyte et al. 2022.

Scandinavian Journal of Psychology, vol. 63, no. 5.

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

Keywords: Psychological needs; private sector; public sector; stress.

Evidence Level: 5B

Link: <https://onlinelibrary.wiley.com/doi/10.1111/sjop.12825>

A moderated mediation analysis of new work-related stressors, psychological distress, and absenteeism in health care during a pandemic: Is recognition the cure for preventing falling in battle?

Background: We aimed to evaluate the effects of new work-related stressors on psychological distress and absenteeism and the role of recognition in these relationships. **Methods:** Moderated path analyses were carried out on a sample of 1128 health care workers. **Results:** Increased workload related to COVID-19 (coronavirus disease 2019) ($\beta = 1.511$, $P \leq 0.01$) and fear of COVID-19 ($\beta = 0.844$, $P \leq 0.01$) were directly associated with a higher level of psychological distress and indirectly ($\beta = 2.306$, $P \leq 0.01$; and $\beta = 1.289$, $P \leq 0.05$, respectively) associated with a higher level of absenteeism. Recognition ($\beta = 0.260$, $P \leq 0.001$) moderated the association between teleworking and psychological distress. Furthermore, this significant moderation effect had a significant impact on absenteeism ($\beta = 0.392$, $P \leq 0.05$). Regardless of the workplace (on site or teleworking), high recognition was beneficial for psychological distress. This effect seems more important when working on site. **Conclusions:** The results propose that specific new work-related stressors should be addressed in the context of organizational change (eg, a pandemic).

Parent-Lamarche et al. 2022.

Journal of Occupational and Environmental Medicine, vol. 64, no. 10.

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: Work-related stressors; psychological distress; absenteeism; health care; pandemic.

Evidence Level: 5B

Link:

https://journals.lww.com/joem/Fulltext/2022/10000/A_Moderated_Mediation_Analysis_of_New_Work_Related.5.aspx

The efficacy of a web-based stress management intervention for employees experiencing adverse working conditions and occupational self-efficacy as a mediator: Randomized controlled trial

Background: Work stress is highly prevalent and puts employees at risk for adverse health consequences. Web-based stress management interventions (SMIs) promoting occupational self-efficacy might be a feasible approach to aid employees to alleviate this burden and to enable them to improve an unbalanced situation between efforts and rewards at work. **Objective:** The first aim of this randomized controlled trial was to investigate the efficacy of a web-based SMI for employees perceiving elevated stress levels and an effort-reward imbalance in comparison to a waitlist control (WLC) group. Second, we investigated whether

the efficacy of an SMI could be explained by an increase in occupational self-efficacy and whether this personal resource enables employees to change adverse working conditions. **Methods:** A total of 262 employees reporting effort-reward imbalance scores over 0.715 and elevated stress levels (10-item Perceived Stress Scale [PSS-10] score ≥ 22) were randomly assigned to either the intervention group (IG; SMI) or the WLC group. The primary outcome was perceived stress measured using the PSS-10. The secondary outcomes included mental and work-related health measures. Four different mediation analyses were conducted with occupational self-efficacy, efforts, and rewards as mediators. After eligibility screening, data were collected web based at baseline (T1), 7 weeks (T2) and 6 months (T3). **Results:** Study participation was completed by 80% (105/130, 80.8%) in the IG and 90% (119/132, 90.2%) in the WLC group. Analyses of covariance revealed that stress reduction was significantly higher for the SMI group compared with the WLC group at T2 ($d=0.87$, 95% CI 0.61-1.12, $P<.001$) and T3 ($d=0.65$, 95% CI 0.41-0.90, $P<.001$). Mediation analyses indicated that occupational self-efficacy mediated the beneficial effect of the SMI on stress directly. Furthermore, the analyses revealed a significant indirect effect of occupational self-efficacy via rewards ($b=0.18$, $t_{259}=4.52$, $P<.001$), but not via efforts ($b=0.01$, $t_{259}=0.27$, $P>.05$) while efforts still had a negative impact on stress ($b=0.46$, $t_{257}=2.32$, $P<.05$). **Conclusions:** The SMI was effective in reducing stress and improving occupational self-efficacy in employees despite them experiencing an effort-reward imbalance at work. Results from mediation analyses suggest that fostering personal resources such as occupational self-efficacy contributes to the efficacy of the SMI and enables employees to achieve positive changes regarding the rewarding aspects of the workplace. However, the SMI seemed to neither directly nor indirectly impact efforts, suggesting that person-focused interventions might not be sufficient and need to be complemented by organizational-focused interventions to comprehensively improve mental health in employees facing adverse working conditions.

Nixon et al. 2022.

Journal of Medical Internet Research, vol. 24, no. 10.

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

Keywords: Effort-reward imbalance; occupational eMental health; occupational self-efficacy; randomized controlled trial; stress.

Evidence Level: 2A

Link: <https://www.jmir.org/2022/10/e40488/>

Enabling Healthy and Safe Workplaces

Health and Wellbeing

This month we explore worker health and safety issues associated with smoking, work engagement, health behaviours, gaming addiction and illicit drug use. In Covid-19 related research we explore the Covid-19 and influenza vaccination uptake and health-related behaviours among Fly-In Fly-Out workers during the Covid-19 pandemic

Smoking causes the disorder of glucose metabolism under different levels of blood pressure in male occupational population

Background: Smoking is an important modifiable factor in the risk of type 2 diabetes. Type 2 diabetes and hypertension overlap in the population. The present study investigated effects of smoking on glucose metabolism under different blood pressure (BP) levels in occupational population. **Methods:** A smoking survey among occupational groups was conducted in 2018. The general linear model was used to analyze the differences of glucose metabolism indexes and BP indexes influenced by different smoking intensity (never 0, mild <10 , moderate <20 , heavy ≥ 20 pack-years). Odds ratios of developing diabetes and β -cell deficiency were analyzed by using logistic regression model. BP was further taken into account in the relationship between smoking and glucose metabolism. As a result, 1730 male workers aged 21 to 60 years were included in the analysis finally. **Results:** Compared to never smokers, heavy smokers had significantly increased fasting plasma glucose. Moderate and above smokers had significantly increased glycosylated hemoglobin, decreased fasting plasma insulin and β -cell function, after adjustment for covariates. Further, smoking intensity was found to have a dose-dependent relationship with impaired β -cell function and

diabetes. In conclusion, smoking has a positive dose-dependent relationship with β -cell deficiency and diabetes. **Conclusions:** Male smoking workers, especially the moderate or higher smoking, with high-normal and high BP levels are at high risk of abnormal glucose metabolism.

Wang et al. 2022.

Journal of Clinical Hypertension, vol. 24, no. 10.

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: Blood pressure; cigarette smoking; glucose metabolism; type 2 diabetes; β -cell deficiency.

Evidence Level: 4A

Link: <https://onlinelibrary.wiley.com/doi/10.1111/jch.14557>

The mediating role of work engagement in the relationship between executive functioning deficits and employee well-being

Background: Executive functioning and its related components have been found to promote well-being. However, there is a limited understanding of the underlying mechanism. **Methods:** Drawing from the job demands-resources and PERMA models, the present study examined the hypothetical mediating role of work engagement in the relationship between executive functioning deficit and well-being among 314 working adults in Malaysia. Participants answered a survey consisting of the Executive Skills Questionnaire-Revised (ESQ-R; a new measure of executive functioning deficits for working adults), Utrecht Work Engagement Scale, Employee Well-Being Scale, and Self-Rated Creativity Scale. **Results:** Pearson correlation analysis showed that the ESQ-R score was negatively associated with all other target variables, while the latter was positively related to each other. Moreover, supporting the hypotheses, the results of mediation analysis using PROCESS macro found that work engagement mediated the negative relationship between executive functioning deficits and well-being after statistically controlling for the creativity score.

Conclusions: The findings not only replicate the beneficial role of executive functioning in employees' well-being but also shed light on the underlying process of the relationship. Implications and directions for future studies are discussed.

Tan et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Malaysia; creativity; employee; engagement; executive function; job demands-resources model; well-being; workers.

Evidence Level: 5B

Link: <https://www.mdpi.com/1660-4601/19/20/13386>

Status of workers' health behavior and the association between occupational characteristics and health behavior

Background: This study investigated differences in unhealthy lifestyle behaviors (ULBs) between workers and nonworkers and demonstrated the association of ULBs with occupational characteristics among workers. **Methods:** This cross-sectional study used data from the Korea National Health and Nutrition Examination Survey from 2007 to 2019. For sociodemographic data, chi-squared tests were used to analyze categorical variables. Odds ratios (ORs) and 95% confidence intervals (CIs) for ULBs were estimated using Poisson regression models after adjusting for age, sex, educational level, and household income. The variables used were current smoking status, heavy drinking, and physical inactivity. **Results:** Workers were associated with an increased risk of current smoking (adjusted OR (aOR) = 1.48, 95%CI = 1.41-1.56), heavy drinking (aOR = 1.79, 95%CI = 1.68-1.90), and physical inactivity (aOR = 1.07, 95%CI = 1.04-1.11) compared with nonworkers. Among workers, the differential risks of ULB according to occupational characteristics were as follows: skilled manual workers, self-employed workers, and workers working >40 h/week were at a higher risk of engaging in all ULBs than those in other occupational categories, paid workers, and workers working ≤ 40 h/week, respectively. Workers showed a higher risk of ULBs than nonworkers.

Conclusions: The risk of ULBs differed according to occupational characteristics, highlighting the need for additional studies and detailed occupational health management.

Lee et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: KNHANES; alcohol drinking; exercise; lifestyle; occupational health; physical activity; smoking.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/20/13021>

Recovery experiences protect emotionally exhausted white-collar workers from gaming addiction

Background: Gaming addiction and its negative consequences have attracted public concern, but relatively little is known regarding its impact on adult workers. **Methods:** This study aims to test the association between gaming addiction and emotional exhaustion as well as the protective effect of recovery experiences on such an association among white-collar workers. We recruited 205 working adults (female = 58%) who voluntarily completed an online questionnaire. **Results:** The results showed that male and younger workers were more vulnerable to gaming addiction. Emotional exhaustion was significantly and positively associated, while two (i.e., relaxation and control) of the four recovery experiences were negatively correlated with gaming addiction. Control experience had an indirect effect on gaming addiction via emotional exhaustion. Moreover, relaxation experience buffered the risk effect of emotional exhaustion on gaming addiction so that the effect is less pronounced at high levels of relaxation. **Conclusions:** Interventions are suggested to raise workers' awareness of effective recovery experiences (especially for control and relaxation) and to facilitate their recovery opportunities.

Zhang et al. 2022.

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

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

Keywords: Chinese workers; emotional exhaustion; gaming addiction; recovery experiences; relaxation.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/19/12543>

Determinants of actual COVID-19 vaccine uptake in a cohort of essential workers: An area-based longitudinal study in the province of Prato, Italy

Background: Identifying determinants of COVID-19 vaccine uptake is essential for developing effective strategies for promoting vaccination. **Methods:** This longitudinal study aimed to explore predictors of actual COVID-19 vaccine uptake in workers involved in essential services during the first lockdown period in the Prato Province (Italy). All essential workers were invited and surveyed before COVID-19 vaccine approval (96.5% participation rate). Participants were followed up to evaluate their actual COVID-19 vaccination uptake using the vaccination register. Multinomial models were performed to assess predictors of delayed vaccination or non-vaccination. **Results:** A total of 691 participants were included, of whom 21.7% had delayed the vaccination and 4.4% were unvaccinated. Participants with a sufficient level of health literacy were 50.2% in the vaccinated-on-time group and 32.3% in the unvaccinated group. The multinomial model predictors of delayed vaccination were work type (OR = 0.51), age between 50 and 59 years (OR = 1.82), and influenza vaccination uptake in the last season (OR = 2.51). Predictors of being unvaccinated were work type (OR = 0.33) and attitudes related to attributing less importance to COVID-19 preventive measures (OR = 0.47). Findings showed distinct predictors for COVID-19 vaccination delay and for being unvaccinated. **Conclusions:** Being unvaccinated seems to be associated with a general skepticism toward prevention measures.

Lastrucci et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: COVID-19; area-based; attitudes and practices; health literacy; infection prevention behaviors; knowledge; predictors; risk perception; vaccination uptake; vaccine.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/20/13216>

Coronavirus disease 2019 (COVID-19) vaccination uptake among healthcare workers

Background: To assess reasons for noncompliance with COVID-19 vaccination among healthcare workers (HCWs). **Design:** Cohort observational and surveillance study. **Setting:** Sheba Medical Center, a 1,600-bed tertiary-care medical center in Israel. **Participants:** The study included 10,888 HCWs including all employees, students, and volunteers. **Intervention:** The BNT162b2 mRNA COVID-19 vaccine was offered to all HCWs of the hospital. Noncompliance was assessed, and pre-rollout and post-rollout surveys were conducted. Data regarding uptake of the vaccine as well as demographic data and compliance with prior influenza vaccination were collected, and 2 surveys were distributed. The survey before the rollout pertained to the intention to receive the vaccine, and the survey after the rollout pertained to all unvaccinated HCWs regarding causes of hesitancy. **Results:** In the pre-rollout survey, 1,673 (47%) of 3,563 HCWs declared their intent to receive the vaccine. Overall, 8,108 (79%) HCWs received the COVID-19 vaccine within 40 days of rollout. In a multivariate logistic regression model, the factors that were significant predictors of vaccine uptake were male sex, age 40-59 years, occupation (paramedical professionals and doctors), high socioeconomic level, and compliance with flu vaccine. Among 425 unvaccinated HCWs who answered the second survey, the most common cause for hesitancy was the risk during pregnancy (31%). **Conclusions:** Although vaccine uptake among HCWs was higher than expected, relatively low uptake was observed among young women and those from lower socioeconomic levels and educational backgrounds. Concerns regarding vaccine safety during pregnancy were common and more data about vaccine safety, especially during pregnancy, might improve compliance.

Gilboa et al. 2022.

Infection Control and Hospital Epidemiology, vol. 43, no. 10.

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

Keywords: Coronavirus; COVID-19; healthcare workers; vaccination.

Evidence Level: 4B

Link: <https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/abs/coronavirus-disease-2019-covid19-vaccination-uptake-among-healthcare-workers/2861D55BC36DC2289E5F823A6CC905C2>

Increasing prevalence of illicit drug use among employees at Swedish workplaces over a 25-year period

Background: Reports indicate that the proportion of adults using drugs of abuse has been increasing in recent years in Europe. Although there are various indicators of increased drug use in Sweden over time, few studies could demonstrate an increase in the proportion of adults using drugs. To investigate changes in drug use prevalence over time, drug testing at the workplace has been used for a 25-year period.

Methods: The urine samples of employees sent by occupational health services from all over Sweden during a 25-year period were analyzed. The analyzing capacity increased over time (from 3411 in 1994 to 60 315 samples analyzed in 2019), and the majority of the samples was analyzed for the following drugs: cannabis (tetrahydrocannabinol), amphetamine, opiates, cocaine, and benzodiazepines. **Results:** There was an overall increase in the proportion of samples that tested positive for illicit drugs over a 25-year period. This increase seemed to take place step-wise, with phases of linear increases and plateaus that over time became shorter. About 1.3% of samples tested positive for drugs in 1994, whereas 5.6% tested positive in 2019. Since 2007, the rate of positive samples has increased for cannabis and decreased for benzodiazepines. Although the rate of samples tested positive for opiates had remained relatively stable over the last 20 years, this rate had increased for amphetamine and cocaine between 2013 and 2019.

Conclusion: The results indicate that the use of illicit drugs among employees at Swedish workplaces has increased during a 25-year period.

Feltmann et al. 2022.

European Journal of Public Health, vol. 32, no. 5.

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: Illicit drug use; employees; Sweden; drug abuse.

Evidence Level: 4B

Link: <https://academic.oup.com/eurpub/article/32/5/760/6675537?login=true>

Multiple health-related behaviours among Fly-In Fly-Out workers in the mining industry in Australia: A cross-sectional survey during the COVID-19 pandemic

Background: Fly-In-Fly-Out (FIFO) workers travel to work at isolated locations, and rotate continuous workdays with leave periods at home, and such work practice is common in the offshore oil and gas and onshore mining industry worldwide. The COVID-19 pandemic and accompanying public health actions appear to have had a negative impact on several health-related behaviours among the general population. However, little is known about the impact of the COVID-19 pandemic on the health behaviours of FIFO workers, who have shown higher pre-pandemic rates of risky behaviours than the general population in Australia. This study examined the health-related behaviours of FIFO workers in the mining industry during the COVID-19 pandemic. **Methods:** A descriptive cross-sectional study was conducted. FIFO workers from an Australian mining company who underwent COVID-19 screening between May and November 2020 completed an online survey about their regular health-related behaviours. The independent sample t-test and Pearson's chi-square test where appropriate were conducted to examine the differences between males and females for the behavioural outcomes. **Results:** A total of 768 FIFO workers (633 males and 135 females) participated in the study. Prevalence of smoking was high (32%). Males smoked more cigarettes per day than females (15.2 ± 7.0 vs 13.1 ± 7.1 , $p = .174$). Most participants (74.7%) drank alcohol on more than two days per week. Compared to females, more males (20.2% vs 8.0%) consumed alcohol at short-term harmful levels ($p = .010$). About a third (34.4%) of the workers (33.5% of males and 38.5% of females, $p = .264$) engaged in inadequate moderate-vigorous exercises/physical activity. About a third (33.1%) of workers (33.7% of males and 30.4% of females; $p = .699$) had multiple risk behaviours.

Conclusions: Prevalence of multiple risk behaviours was high. Interventions aimed at the prevention of risky health-related behaviours should target the different behavioural patterns and may require emphasis on gender-informed techniques particularly when addressing alcohol consumption.

Asare et al. 2022.

PLoS One, vol. 17, no. 10.

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

Keywords: FIFO; mining; health behaviours; Australia; COVID-19.

Evidence Level: 4A

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0275008>

Decreased influenza vaccination coverage among Chinese healthcare workers during the COVID-19 pandemic

Background: Healthcare workers (HCWs) were the priority group for influenza vaccination, in China during the 2020/2021 and 2021/2022 influenza seasons. However, vaccination rates in HCWs have always been low. This study investigated influenza vaccination status among Chinese HCWs and analyzed the factors driving vaccination. **Methods:** We provided electronic questionnaires to HCWs from January 27, 2022 to February 21, 2022, using the WeChat platform "Breath Circles". HCWs who received the link could also forward it to their colleagues. Binary logistic regression models were used to analyze vaccination-associated factors among HCWs. **Results:** Among the 1697 HCWs surveyed, vaccination coverage was 43.7% (741/1697) during the 2020/2021 influenza season, and 35.4% (600/1697) during the 2021/2022 influenza season, as of February 21, 2022. Additionally, 22.7% (385/1697) and 22.1% (358/1697) of HCWs reported that their workplaces implemented a free vaccination policy for all employees during the 2020/2021 and 2021/2022 influenza seasons. HCWs who were required to be vaccinated according to hospital regulations, and whose hospitals implemented the free influenza vaccine policy were more likely to be vaccinated (2020/2021 and 2021/2022; $P < 0.05$). In addition, the economic level of the HCWs' province (2021/2022, $P < 0.05$) and the HCWs' knowledge about vaccination and willingness to get vaccinated, such as active learning about vaccines (2020/2021, $P < 0.05$), supportive attitude toward vaccination for all HCWs (2020/2021 and 2021/2022; $P < 0.05$), also had an impact on vaccine coverage. **Conclusions:** A free influenza vaccination policy and workplace required vaccination are effective in improving influenza vaccination coverage among HCWs. Influenza vaccination coverage of Chinese HCWs remained low and showed a downward trend after the COVID-19 outbreak. Further effective measures, such as advocacy campaigns, free vaccine policies, and on-site vaccination could be implemented to improve influenza vaccination coverage.

Ma et al. 2022.

Infectious Diseases of Poverty, vol. 11, no. 1.

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

Keywords: China; coverage; healthcare worker; influenza; internet-based survey; vaccination.

Evidence Level: 4A

Link: <https://idpjournals.biomedcentral.com/articles/10.1186/s40249-022-01029-0>

Work Health and Safety

This month we explore the issues associated with preventive measures against infection and the use of an App to assess occupational hearing loss. In Covid-19 related research we explore personal protective equipment (PPE), related adverse skin reactions and the role of occupational physicians in the workplace during the COVID-19 pandemic

Association between preventive measures against workplace infection and preventive behavior against personal infection

Background: To prevent the spread of infection, it is necessary for each individual to adopt infection prevention behavior. **Methods:** We investigated the effect of infection control measures implemented in the workplace on personal infection prevention behavior. We conducted a self-administered questionnaire survey through the Internet from December 22 to 25, 2020, during which period coronavirus disease 2019 (COVID-19) was spreading. Among respondents aged 20 to 65 years (n=27,036), 21,915 workers were included in the analysis. **Results:** The results showed that as the number of infection control measures in the workplace increased, implementation of infection prevention behavior by individuals also significantly increased. However, the relationship differed depending on the type of personal infection prevention behavior. Specifically, infection control measures against COVID-19 in the workplace may affect personal infection prevention behavior. Implementation of infection control measures in the workplace increases awareness of the importance of individual infection prevention behavior and its implementation by all individuals. **Conclusions:** These findings may be applicable not only to COVID-19 measures but also to responses to other emerging infections and seasonal influenza.

Kawasumi et al. 2022.

Industrial Health, vol. 60, no. 5.

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: COVID-19; infection control measures; pandemic; personal infection prevention behavior; workplace.

Evidence Level: 4A

Link: https://www.jstage.jst.go.jp/article/indhealth/60/5/60_2021-0162/_article

What is the role of occupational physicians in the workplace during the COVID-19 pandemic in Japan? A qualitative interview study

Background: The coronavirus disease 2019 (COVID-19) pandemic has had various impacts on businesses and workers worldwide. The spread of infection has been reported through cluster outbreaks in the workplace, and World Health Organization has emphasized workplace infection control measures. Occupational physicians (OPs) are expected to actively support employers' efforts to minimize the damage of the pandemic. However, there is little research on the role of these specialists during a pandemic. Clarification of the contributions of OPs to health and safety at the workplace in the COVID-19 pandemic would be beneficial to ensure that OPs can be effectively deployed in the next pandemic. **Methods:** We employed semi-structured interviews and qualitative content analysis of the interview transcripts. Twenty OPs were selected as priority candidates from among 600 OPs certificated of the JSOH, and thirteen who met the eligibility criteria agreed to participate. The online interviews were conducted in November and December 2020 with thirteen OPs. We extracted meaning units (MUs) from interview transcripts according to the research question: "What was the role of OP in the COVID-19 pandemic?" and condensed and abstracted them into codes and categorized them. Validity was confirmed by additional 5 OPs interviews.

Results: A total of 503 MUs were extracted from the transcripts. These were abstracted into 10 sub-categories and two categories. Categories 1 and 2 dealt with "Role in confronting the direct effects of the pandemic" and "Role in confronting the indirect effects of the pandemic" and accounted for 434 (86.3%) and 69 (13.7%) MUs, respectively. These results were validated by another 5 interviews. **Conclusion:** This study identified the role of OPs in Japan in the COVID-19 pandemic. The results showed that they made a wide range of contributions to the direct and indirect effects of the pandemic. We hope our findings will help OPs during future pandemics or other long-term emergency situations.

Igarashi et al. 2022.

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

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

Keywords: COVID-19; disaster; emerging infectious diseases; occupational health and safety; occupational physician; pandemic; qualitative interview study.

Evidence Level: 5B

Link: <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-022-08659-y>

Acceptability of the Wulira app in assessing occupational hearing loss among workers in a steel and iron manufacturing industry

Background: Industrial workers are at a high risk of acquiring noise induced hearing loss, yet there is minimal hearing loss screening of such groups of people. Pure Tone Audiometry (PTA), the gold standard for hearing loss screening, is expensive, and not readily available at health sites. Mobile audiometry can bridge this gap. However, there is limited knowledge on its acceptability in low-income countries like Uganda. We aimed to assess the acceptability of using the Wulira App, a validated mobile phone app, in assessing hearing loss among industrial workers in Kampala. **Methods:** We carried out a qualitative study in a steel and iron manufacturing industry in Kampala, in April 2021. Four Focus group discussions (FGDs) with 8 participants per FGD, and 12 In-depth Interviews (IDI), were conducted on the industrial workers. The industrial workers were first tested for hearing loss, then enrolled for the FGDs and IDI. A semi-structured interview guide was used. Audio recordings were transcribed verbatim. Themes were derived using thematic content analysis, borrowing from Sekhon's model of Acceptability of Health Interventions.

Results: Industrial workers found the Wulira App user friendly, cheap, time saving, and an effective hearing loss assessment tool. However, barriers such as lack of smart phones, difficulty in navigating the app, and fear of getting bad news hindered the App's acceptability, as a hearing assessment tool.

Conclusion: Hearing loss assessment using Wulira App was acceptable to the industry workers. There is need of informing industrial workers on the essence of carrying out regular hearing loss screening, such that barriers like fear of getting screened are overcome.

Atukunda et al. 2022.

PLoS One, vol. 17, no. 10.

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

Keywords: Hearing loss; manufacturing industry; workers; Wulira app; steel; iron.

Evidence Level: 5B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0266858>

Personal protective equipment (PPE) related adverse skin reactions among healthcare workers at the main COVID-19 isolation center in Barbados

Background: The use of personal protective equipment (PPE) reduces the risk of transmission of infectious agents significantly among healthcare workers (HCWs). The study aimed to investigate the prevalence and characteristics of PPE-related adverse skin reactions among HCWs working at the main COVID-19 isolation center in Barbados. **Methods:** A cross-sectional web-based online survey was conducted during April to June 2021 which recorded demographic information, details of PPE use and adverse skin reactions including severity and duration of onset of symptoms. **Results:** Most of the respondents used PPE for consecutive days (77.9%), 1-6 h/day (59.2%), and more than a year (62.5%). Fewer than half of the participants (45.6%) experienced adverse skin reactions from the use of PPE. The reactions were mostly observed in the cheeks (40.4%) and nose bridges (35.6%). Females had more reactions than their male counterparts ($p = 0.003$). The use of N95 masks and a combination of surgical and N95 masks produced

adverse effects predominantly in the ears (60%) and cheeks (56.4%). Binary logistic regression showed that female HCWs (OR = 5.720 95% CI: 1.631, 20.063), doctors (OR = 5.215 95% CI: 0.877, 31.002), and longer duration of PPE use (>1 year) (OR = 2.902 95% CI: 0.958, 8.787) caused a significantly higher prevalence of adverse skin reactions. **Conclusion:** The PPE-related skin reactions were common among HCWs which mainly occurred due to prolonged use. Preventive measures inclusive of appropriate training of HCWs on the use of PPE are recommended to minimize these adverse events.

Bharatha et al. 2022.

Frontiers in Public Health, vol. 11.

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

Keywords: Barbados; COVID-19; PPE; adverse skin reactions; healthcare workers.

Evidence Level: 4B

Link: <https://www.frontiersin.org/articles/10.3389/fpubh.2022.978590/full>

Risk Assessment

This month we explore the use of smart workwear to classify body postures and occupational health surveillance for hand-intensive work

Classification of body postures using smart workwear

Background: Despite advancing automation, employees in many industrial and service occupations still have to perform physically intensive work that may have negative effects on the health of the musculoskeletal system. For targeted preventive measures, precise knowledge of the work postures and movements performed is necessary. **Methods:** Prototype smart work clothes equipped with 15 inertial sensors were used to record reference body postures of 20 subjects. These reference postures were used to create a software-based posture classifier according to the Ovako Working Posture Analysing System (OWAS) by means of an evolutionary training algorithm. **Results:** A total of 111,275 posture shots were recorded and used for training the classifier. The results show that smart workwear, with the help of evolutionary trained software classifiers, is in principle capable of detecting harmful postures of its wearer. The detection rate of the evolutionary trained classifier ($\bar{a}_{ccr} = 0.35$ for the postures of the back, $\bar{a}_{ccr} = 0.64$ for the arms, and $\bar{a}_{ccr} = 0.25$ for the legs) outperforms that of a TensorFlow trained classifying neural network. **Conclusions:** In principle, smart workwear - as prototypically shown in this paper - can be a helpful tool for assessing an individual's risk for work-related musculoskeletal disorders. Numerous potential sources of error have been identified that can affect the detection accuracy of software classifiers required for this purpose.

Lins et al. 2022.

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

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

Keywords: Inertial sensors; neuroevolution; non-neutral postures; work-related musculoskeletal disorders.

Evidence Level: 5A

Link: <https://bmcmusculoskeletdisord.biomedcentral.com/articles/10.1186/s12891-022-05821-9>

Ergonomists' experiences of executing occupational health surveillance for workers exposed to hand-intensive work: A qualitative exploration

Background: In order to reduce work-related upper limb disorders, the Swedish Work Environment Authority introduced an occupational health surveillance targeting hand-intensive work. A process model, aimed at supporting the employers as well as the occupational health service provider (i.e., ergonomist) in the work process with the occupational health surveillance, was developed. The objective of this qualitative study was to explore ergonomists' experiences of the execution of occupational health surveillance for hand-intensive work when following the novel process model as well as factors influencing the execution.

Methods: Semi-structured individual interviews were conducted with ten ergonomists on one occasion regarding their experience of following the work process. Qualitative content analysis with an inductive approach was used for analyzing the data. **Results:** The ergonomists' experiences were summarized in one

theme "A joint roadmap supporting a participatory process" and two categories "Clear structure provided by the components" and "The process influenced by collaboration and context". The ergonomists valued being guided by the systematics of the model, which provided structure and clarity in their work. Factors affecting the execution were related to communication deficiencies and uncertainties regarding expectations between different roles and functions (e.g., ergonomists and contact person, lack of information to workers). Additional factors, for instance, companies' routines and the ergonomist's intra-organizational support, such as access to IT-resources, could also affect the process. **Conclusions:** The findings reveal that this process model facilitates the ergonomists' work and cooperation with a client company. However, the process model needs to be developed and accompanied by a guideline with information related to the process, including e.g., description of a start-up meeting and of the roles/functions of the involved parties.

Eliasson et al. 2022.

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

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

Keywords: Ergonomics; legislation; medical health checks; qualitative research; risk assessment; Sweden; work environment; work-related upper limb disorders.

Evidence Level: 5B

Link: <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-022-08601-2>

Chronic Health Issues

This month we explore the chronic health issues associated with physical diseases and synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) syndrome

Qualitative study of barriers and facilitators encountered by individuals with physical diseases in returning and continuing to work

Background: The number of employees with physical diseases is increasing, and there is a need for support to help them return and continue to work. To provide effective support, it is important to identify barriers and facilitators for individuals in returning and continuing to work. Previous studies have reported barriers and facilitators for specific diseases. However, few reports have dealt with these issues across various diseases. To identify a range of barriers and facilitators that may apply to different physical diseases, we conducted a qualitative analysis by interviewing patients with diverse characteristics being treated for diseases. **Methods:** We conducted semi-structured interviews based on the criteria for qualitative research. We investigated three disease groups to obtain details of barriers and facilitators: impairments that were visible to other people (mainly stroke); impairments invisible to others (mainly heart disease); and impairments that changed over time (mainly cancer). Interview transcripts were analyzed and the results reported using systematic text condensation. **Results:** We extracted 769 meaning units from 28 patient interviews. We categorized barriers and facilitators that were generalizable to various diseases into three themes (personal factors, workplace factors, and inter-sectoral collaboration and social resources) and 10 sub-themes (work ability, psychological impacts, health literacy, social status, family background, workplace structure, workplace system, workplace support, inter-sectoral collaboration, and social resources). **Conclusions:** This study identified 10 sub-themes that can be applied for workers with physical diseases; those sub-themes may be used as a basis for communicating with those individuals about returning and continuing to work. Our results suggest that various barriers and facilitators for workers with physical diseases should be understood and addressed at medical institutions, workplaces, and support sites.

Inoue et al. 2022.

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

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

Keywords: Cancer survivors; continue to work; heart disease; qualitative study; return to work; stroke.

Evidence Level: 5B

Link: <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-022-08604-z>

Work productivity and activity in patients with SAPHO syndrome: A cross-sectional observational study

Background: Our understanding of work productivity impairment among patients with synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) syndrome is limited. The purpose of this study was to provide an overview of work productivity loss in SAPHO syndrome patients through the use of the work productivity and activity impairment (WPAI) questionnaire, as well as to investigate the relationship between the WPAI and other disease-related indicators. **Methods:** Patients for this cross-sectional study were recruited from Peking Union Medical College Hospital (Beijing, China). The questionnaires incorporating the WPAI were administered, along with the inclusion of demographic data, disease-specific measures, and general health variables. The construct validity of the WPAI was evaluated via the correlations between WPAI outcomes and other measures. Wilcoxon rank-sum tests and nonparametric Kruskal–Wallis tests were used for the comparison of the WPAI outcomes between known groups. **Results:** A total of 376 patients were included, and 201 patients (53.5%) were employed. The medians (interquartile range [IQR]) of absenteeism, presenteeism, work productivity loss, and activity impairment were 0% (0-13%), 20% (0-40%), 20% (0-52%), and 30% (0-50%), respectively. All of the WPAI outcomes showed moderate to strong correlations with other generic and disease-specific measures ($|r| = 0.43-0.75$), except for absenteeism. Increasing disease activity and worse health status were significantly associated with increased impairments of work productivity and activity. **Conclusion:** This study highlights the negative effects of SAPHO syndrome on the work productivity and activity of patients, thus indicating good construct validity and discriminative ability of the WPAI. To reduce the economic burden, it is important to improve the work productivity and daily activity of patients by ameliorating clinical care.

Li et al. 2022.

Orphanet Journal of Rare Diseases, vol. 17, no. 1.

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

Keywords: Activity impairment; SAPHO syndrome; Work productivity.

Evidence Level: 4B

Link: <https://ojrd.biomedcentral.com/articles/10.1186/s13023-022-02523-2>

Occupational Exposure

This month we explore the issues associated with occupational exposure to silica, general carcinogens, noise levels and the Covid-19 virus.

Cumulative occupational exposure to inorganic dust and fumes and invasive pneumococcal disease with pneumonia

Background: Occupational exposure to inorganic dust and fumes in the year preceding disease has been associated with increased pneumococcal pneumonia risk, but the impact of prior cumulative exposure has not been characterized. **Methods:** We studied 3184 cases of invasive pneumococcal disease with pneumonia. The case index date was the day the infection was diagnosed. We selected six controls for each case from the Swedish population registry; each control was assigned the index date of their corresponding case. We linked job histories to a job-exposure matrix to calculate a cumulative exposure index, intensity-years, by multiplying the duration (maximum 5 years) of each exposure with the level of exposure (0 for unexposed, 1 for low and 4 for high). We used conditional logistic analyses to estimate the odds ratio (OR) of invasive pneumococcal disease with pneumonia adjusted for comorbidities, educational level, income and other occupational exposures. **Results:** Taking other occupational exposures into account, greater than 5 intensity-years of exposure to silica dust or to fumes was each associated with increased odds for invasive pneumococcal disease with pneumonia (OR 2.53, 95% CI 1.49-4.32) and (OR 2.24, 95% CI 1.41-3.55), respectively. Five intensity-years or less of exposure to silica dust or fumes manifested lower odds (OR 1.45, 95% CI 1.20-1.76) and (OR 1.05, 95% CI 0.94-1.16), respectively. **Conclusion:** This study adds evidence that the risk of pneumococcal pneumonia increases with increasing cumulative exposure to dust and fumes, indicating the importance of cumulative exposure.

Torén et al. 2022.

International Archives of Occupational and Environmental Health, vol. 95, no. 8.

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

Keywords: Case; control; inorganic dust; occupational exposure; pneumococci; pneumonia.

Evidence Level: 5B

Link: <https://link.springer.com/article/10.1007/s00420-022-01848-6>

Estimate of occupational exposure to carcinogens among migrant workers in the United Arab Emirates: A cross-sectional study

Background: Occupational illnesses, such as cancer, cause more deaths each year than occupational accidents. Occupational carcinogens include physical, chemical, biological and organizational hazards. In the United Arab Emirates (UAE), migrant workers account for 80% of labor. Being sometimes employed as unskilled workers and more willing to work in demanding jobs, their vulnerability and exposure may be increased. This study aimed to estimate the prevalence of occupational exposure to workplace carcinogens among migrant workers in the UAE. **Methods:** A sample of employees working in construction, cleaning, dry cleaning, mechanic workshops and hair salons were recruited and interviewed. Using OccIDEAS (an online assessment tool), participants were asked questions about their demographics, work history and regular tasks. Exposure to various carcinogens was estimated using the in-built algorithms of OccIDEAS. **Results:** A sample of 1778 workers was included. The sample consisted of workers from Bangladesh (19.2%), India (31%), Nepal (4.7%), Pakistan (29.9%) and the Philippines (4.8%), with the rest from other nationalities. Overall, the prevalence of probable exposure was considerable, with the highest among drivers (96%) and the lowest among laundry workers (52%). Moderate to high exposure was found to 20 different carcinogens. Self-rated health among those who were exposed to carcinogens was significantly lower than among those not exposed (AOR = 0.783, 95% CI [0.638-0.961]). **Conclusions:** Exposure to several different carcinogens is relatively common in the UAE among migrant workers. Further strengthening policies and the implementation of tailored interventions are needed to prevent exposure to occupational carcinogens and, consequently, to combat occupational cancer in the UAE.

Elbarazi et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: OccIDEAS; UAE; carcinogenic exposure; cross-sectional survey; occupational cancer; prevalence; self-rated health.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/20/13012>

Epidemiology of silicosis reported to the central register of occupational diseases over last 20 years in Poland

Background: The aim of the study was to investigate and assess the incidence of silicosis cases acknowledged as occupational diseases in Poland in 2000-2019. **Material and methods:** The cases of all medically recognized pneumoconioses, including silicoses, certified as occupational diseases were studied. The records were extracted from the Central Register of Occupational Diseases, the only official Polish central electronic data base of occupational diseases. **Results:** During the period 2000-2019, 2066 confirmed cases of silicoses and 10 665 cases of other pneumoconioses including asbestosis and coal workers' pneumoconiosis were reported to the Central Register of Occupational Diseases. Silicoses accounted for 12.8-21.2% of all pneumoconioses. The number of confirmed silicoses cases was growing along with the length of latency period and was the highest for the period of ≥ 40 years (513 cases). Over 70% of silicoses cases occurred after occupational exposure > 20 years. The most workers who evolved silicosis were employed in manufacturing, predominantly casting of iron, mining and quarrying and construction. **Conclusions:** The number of confirmed cases of silicosis in Poland decreased in 2000-2019 but the disease still remains an important health problem. Prevention is crucial to reduce further disease incidence. The medical monitoring standards of exposed workers should be improved. Developing new diagnosing guidelines with the use of other imaging examinations, like high-resolution computed tomography, has to be considered. The analysis should contribute into the implementation of silicosis preventative programmes, both at the enterprise and national level. *Int J Occup Med Environ Health*. 2022;35(5):561-70.

Nowak-Pasternak et al. 2022.

International Journal of Occupational Medicine and Environmental Health, vol. 35, no. 5.

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

Keywords: Poland; epidemiology; occupational diseases; pneumoconioses; silica; silicosis.

Evidence Level: 4B

Link: <http://ijomeh.eu/Epidemiology-of-silicosis-reported-to-the-central-register-of-occupational-diseases,147705,0,2.html>

Noise exposure and hearing status among employees using communication headsets

Background: The objective of this study was to assess the hearing of employees using communication headsets with regard to their exposure to noise. **Material and methods:** The study group comprised 213 employees, including 21 workers of the furniture industry, 15 court transcribers and 177 call center operators, aged 19-55 years, working with headsets for a period of up to 25 years. All the participants underwent a standard puretone audiometry, extended high-frequency audiometry (EHFA) as well as transient-evoked otoacoustic emissions (TEOAEs) and distortion-product otoacoustic emissions (DPOAEs). Noise exposure from headsets was evaluated using the microphone in a real ear technique according to PN-EN ISO 11904-1:2008. **Results:** Personal daily noise exposure levels ranged 57-96 dB and exceeded 85 dB only in 1.4% of the call center operators. Forty-two percent of the participants had bilateral normal hearing in the standard frequency range of 250-8000 Hz, and 33% in the extended highfrequency range of 9-16 kHz. It was found that DPOAEs were present bilaterally in 59% of the participants. Reproducibility of TEOAE at >70% and signal-to-noise ratio at >6 was exhibited by 42% and 17% of them, respectively. The 3 subgroups of workers differed in age, gender, noise exposure and type of headsets in use. However, after adjusting for age and gender, significant differences between these subgroups in terms of hearing were mostly visible in EHFA. A significant impact of age, gender, daily noise exposure level and current job tenure on hearing tests results was also noted among the call center operators and the transcribers. The most pronounced were the effects of age and gender, whereas the impact of the daily noise exposure level was less evident. **Conclusions:** It seems that EHFA is useful for recognizing early signs of noise-induced hearing loss among communication headset users. However, further studies are needed before any firm conclusions concerning the risk of hearing impairment due to the use of such devices can be drawn. *Int J Occup Med Environ Health*. 2022;35(5):585-614.

Pawlaczyk-Łuszczynska et al. 2022.

International Journal of Occupational Medicine and Environmental Health, vol. 35, no. 5.

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

Keywords: Communication headsets; extended high-frequency audiometry; noise-induced hearing loss; occupational exposure to noise; otoacoustic emissions; pure-tone audiometry.

Evidence Level: 5B

Link: <http://ijomeh.eu/Noise-exposure-and-hearing-status-among-employees-using-communication-headsets,148074,0,2.html>

Racial disparity in potential occupational exposure to COVID-19

Background: Nationwide, as of 20 June 2021, COVID-19 has claimed more than 599,000 lives and infected nearly 33 million people. Studies have shown that COVID-19 disproportionately affects some racial and ethnic minority groups. This study examined whether certain racial and ethnic groups were overrepresented in occupations with potentially high COVID-19 exposure risks, relative to their share in the total workforce. The study incorporates white collar workers, who to date have not gotten as much attention in terms of workers safety. **Methods:** Using the March and April 2020 Current Population Survey and O*Net data, this study examined whether certain racial and ethnic groups were overrepresented in occupations with potentially high risk of exposure to COVID-19 (exposure to disease and infection at work, inability to maintain physical distancing at work, and inability to work from home) relative to their share in the total workforce. **Results:** The results showed that Black workers were overrepresented in occupations with high potential risk of exposure to disease and infection at work and inability to maintain physical distancing at work. Hispanic workers were overrepresented in occupations where potential risk of inability to work from home was the highest. **Conclusion:** Occupation can be one of the risk factors for the current disproportionately high COVID-19 infection rates among Black and Hispanic workers. COVID-19-related

prevention measures at high risk occupations, including providing adequate personal protective equipment, training, working space, and vaccinations, could help to reduce not only the spread of COVID-19 and infectious diseases but also their disproportionately high impact in certain minority racial and ethnic groups.

Asfaw 2022.

Journal of Racial and Ethnic Health Disparities, vol. 9, no. 5.

User License: PMC Open Access Subset

Keywords: COVID-19 risk; occupational risk; racial disparity in occupational risk.

Evidence Level: 4A

Link: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8340801/>

Mortality among mine and mill workers exposed to respirable crystalline silica

Background: Millions of workers are potentially exposed to respirable crystalline silica (RCS) which has been associated with several diseases. We updated the mortality experience of a cohort of 2,650 mine and mill workers at four manufacturing facilities to assess cause-specific mortality risks associated with estimated cumulative RCS exposure. **Methods:** Study eligibility was defined as any employee who had ≥ 1 year of service by 2000, with work history experience available from 1945 through 2004. Vital status and cause of death were ascertained from 1945 through 2015. RCS exposure was estimated across plant-, department-, job-, and time-dependent categories using historic industrial hygiene sampling data and professional judgment. Associations between cumulative RCS (mg/m³-years) and cause-specific mortality were examined using Cox proportional hazard regression models. **Results:** In the exposure-response analysis defined on quartiles of cumulative RCS exposure, no increasing trend (ptrend = 0.37) in lung cancer mortality (n = 116 deaths) was observed (Hazard ratio (HR) = 1.00 (referent), 1.20, 1.85, 0.92). Mortality risk for non-malignant respiratory disease was increased across quartiles (HR = 1.00, 1.35, 1.89, 1.70; ptrend = 0.15), based on 83 deaths. Non-malignant renal disease mortality was increased across quartiles (HR = 1.00, 6.64, 3.79, 3.29; ptrend = 0.11), based on 26 deaths. **Conclusions:** After nearly seven decades of follow-up, the exposure-response analyses showed no evidence of a positive trend for lung cancer, and limited evidence of a trend for non-malignant respiratory disease, and non-malignant renal disease mortality as a result of cumulative RCS exposure in this occupational cohort.

Kleinschmidt et al. 2022.

PLoS One, vol. 17, no. 10.

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

Keywords: Mortality; respirable crystalline silica; disease; mining; mill workers.

Evidence Level: 4A

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0274103>

Sedentary Practices

This month we explore the issues associated with sedentary work including an intervention to reduce sitting time and corrective exercises for office workers with upper crossed syndrome

Mixed-methods process evaluation of the Dynamic Work study: A multicomponent intervention for office workers to reduce sitting time

Background: Previously, we observed no significant reductions in sitting time of the multicomponent Dynamic Work (DW) intervention among office workers. **Methods:** In this study we used mixed-method data to understand context, implementation (i.e. recruitment and delivery) and mechanism of impact (i.e. experiences) of the DW intervention and to explore whether an higher implementation index score led to larger changes in participants' outcomes. **Results:** We found considerable variation across departments regarding context (i.e. different size and work tasks) and implementation (i.e. delivery varied). Satisfaction with the DW intervention was high. An higher implementation index score was associated with lower overall sitting time, lower occupational sitting time, higher number of steps/day and steps/day at work at 4-months, which was maintained at 8-month for occupational sitting time. **Conclusions:** These findings

provide an understanding that implementation was affected by a lack of availability of intervention components, department policy, work tasks, positioning and work location.

Jelsma et al. 2022.

Applied Ergonomics, vol. 104.

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: Multicomponent intervention; office workers; process evaluation.

Evidence Level: 5B

Link: <https://www.sciencedirect.com/science/article/pii/S0003687022001466?via%3Dihub>

Corrective exercises administered online vs at the workplace for pain and function in the office workers with upper crossed syndrome: Randomized controlled trial

Background: To evaluate the effects of online-supervised versus workplace corrective exercises on neck-shoulder pain (NSP), sick leave, posture, workability, and muscular activity among office workers with the upper crossed syndrome (UCS). **Methods:** We performed a parallel-group randomized control trial at Shahid Beheshti University, Tehran, Iran, assigning 36 office workers to online-supervised, workplace, and control groups (mean (SD) age 38.91 ± 3.87 , 38.58 ± 7.34 , 37.00 ± 8.12). Inclusion criteria were alignment alteration (forward head ($\geq 45^\circ$), rounding shoulder ($\geq 52^\circ$), rounding back ($\geq 42^\circ$), and pain intensity ≥ 3 in neck and shoulder. The two intervention groups performed 8-week exercise program, while the control group continued usual activities. Primary (NSP and sick leave) and secondary outcomes [postural angles, workability, and muscular activity] were measured by VAS, outcome evaluation questionnaire (OEQ), photogrammetry, workability index, and EMG, respectively, at the baseline and an 8-week follow-up].

Results: ANCOVA results revealed improvements for the online-supervised group versus control for NSP ($P = 0.007$), postural angles ($P = 0.000$, $P = 0.001$, $P = 0.005$), workability ($P = 0.048$, $P = 0.042$), and upper trapezius activation ($P = 0.024$, $P = 0.016$), respectively. Using paired t tests, both intervention groups improved from baseline to follow-up for NSP ($P = 0.000$, $P = 0.002$), forward head posture ($P = 0.000$, $P = 0.000$), round shoulders ($P = 0.001$, $P = 0.031$), and round back ($P = 0.034$, $P = 0.008$), respectively. Related parameters of workability ($P = 0.041$, $P = 0.038$), upper trapezius ($P = 0.005$, $P = 0.005$, $P = 0.022$), and serratus anterior ($P = 0.020$, $P = 0.015$) changed only in the online-supervised group. **Conclusion:** Online-supervised corrective exercise seems to improve a range of parameters related to work performance. These findings are highly applicable in light of the ongoing COVID pandemic; many workers have to work from home.

Yaghoubitajani et al. 2022.

International Archives of Occupational and Environmental Health, vol. 95, no. 8.

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

Keywords: Muscle activation; neck-shoulder pain; online-supervised; postural malalignment; workability; workplace corrective exercises.

Evidence Level: 2B

Link: <https://link.springer.com/article/10.1007/s00420-022-01859-3>

Musculoskeletal Health

This month we explore the prevalence of multi-site musculoskeletal symptoms in the electronics manufacturing industry, the association between chronic low back pain and sleep quality, and the effects of early physiotherapy treatment on musculoskeletal injury outcomes

The effects of early physiotherapy treatment on musculoskeletal injury outcomes in military personnel: A narrative review

Background: The risks and incidence rates of musculoskeletal injuries among military personnel are high, and the importance of physiotherapy in treating these injuries is well established. However, what is less clear is whether the timing of commencement of physiotherapy treatment affects musculoskeletal injury outcomes in military personnel. This lack of clarity is exacerbated by the known underreporting of injuries among military personnel, and the resulting self-management of musculoskeletal injuries using analgesics,

non-steroidal anti-inflammatories and other means. **Methods:** This narrative review was designed to identify and synthesize current evidence regarding the effects of timing of physiotherapy treatment on musculoskeletal injury outcomes, focusing on potential benefits of early versus typical or delayed commencement of physiotherapy treatment. **Results:** Overall, current evidence suggests early physiotherapy treatment of musculoskeletal injuries offers distinct advantages over typical or delayed commencement of physiotherapy treatment in military settings. Specifically, it appears early treatment expedites recovery in early phases following injury onset and benefits longer term mental health and well-being. It may also reduce the need for more invasive and costly health care interventions and enable earlier return to training and operational service. **Conclusions:** Importantly, a cultural shift within military contexts to ensure early reporting of musculoskeletal injuries is required if the benefits of early commencement of physiotherapy treatment are to be achieved.

Campbell et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Delayed treatment; early treatment; military; musculoskeletal injury; occupational; physical therapy; physiotherapy.

Evidence Level: 6A

Link: <https://www.mdpi.com/1660-4601/19/20/13416>

Multi-site musculoskeletal symptoms in the electronics manufacturing industry in china: A cross-sectional study

Background: With the development of the electronics manufacturing industry, the demand for human resources has increased, which has also led to the frequent occurrence of multi-site work-related musculoskeletal disorders. **Method:** The participants ($n = 7307$) were recruited from 30 enterprises in China in 2018. The prevalence of musculoskeletal disorders was estimated using a modified Chinese version of the Musculoskeletal Disorders Questionnaire. The multivariate logistic regression model was applied to evaluate the effects of risk factors on multi-site musculoskeletal symptoms. Additionally, the log-binomial model was established to examine the correlation between the various sites of musculoskeletal symptoms in the body. **Results:** The 12-month prevalence of musculoskeletal symptoms among participants was 40.6%. The proportion of musculoskeletal symptoms involving single-site and 2 body sites were 11.6% and 29.0%, respectively. The results of logistic regression showed that female adults who smoked, had ≥ 5 -year job tenure, and always stood or sat for long period at work had a higher risk in 2 body sites of musculoskeletal symptoms ($p < 0.05$). However, physical exercise during leisure time and "Squatting or kneeling for long period at work" were more frequently protective factors. Furthermore, the log-binomial model indicated that the neck and shoulder were significantly related to each other (Prevalence Ratio, PR: 5.511 and 7.017). **Conclusions:** Several demographic characteristics and work-related factors were associated with multi-site musculoskeletal symptoms in the electronics manufacturing industry in China. Improving the levels of physical exercise and reducing posture problems and force loads may help to promote the health of workers.

Yin et al. 2022.

International Journal of Environmental Research and Public Health, vol. 19, no. 20.

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

Keywords: Electronics manufacturing industry; epidemiology; multi-site; work-related musculoskeletal disorders.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/19/20/13315>

Bidirectional associations between chronic low back pain and sleep quality: A cohort study with schoolteachers

Background: Although both chronic low back pain (cLBP) and sleep problems are prevalent among active workers, the relation between these variables is not well established. This study aimed to examine the bidirectional association between cLBP and sleep in schoolteachers. **Methods:** The Pittsburgh Sleep Quality Index (PSQI) and cLBP were self-reported by 530 schoolteachers in Londrina, Brazil, at baseline and after 2

years of follow-up. Generalized estimating equations were adjusted for sociodemographic, lifestyle and mental health variables. **Results:** Poor sleep quality at baseline was associated with cLBP at follow-up after adjusting for sociodemographic and lifestyle variables (OR=1.61; 95% confidence interval [95% CI]=1.06, 2.47). Changes in the PSQI score over time were also associated with a higher likelihood of cLBP at follow-up (OR=1.13; 95% CI=1.07, 1.20 for each 1-point increase in the PSQI score), regardless of mental health condition. cLBP at baseline was associated with worse sleep quality at follow-up after adjusting for sociodemographic and lifestyle variables (OR=1.56; 95% CI=1.02, 2.37). The presence of cLBP also changed the PSQI score over time (β coefficient=1.153; 95% CI=0.493, 1.814). **Conclusions:** Worse sleep quality was prospectively and bidirectionally associated with cLBP. Concretely, changes in PSQI values after 2 years of follow-up increased the likelihood of reporting cLBP, and baseline cLBP was associated with sleep quality worsening (i.e., higher score in the PSQI). Mental health conditions such as self-rated health, depression and anxiety play a relevant confounding role in the bidirectional associations between sleep and chronic low back pain.

Campanini et al. 2022.

Physiology & Behavior, vol. 254.

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

Keywords: Chronic pain; cohort study; epidemiology; low back pain; schoolteachers; sleep.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S003193842200186X?via%3Dihub>