Workplace Research Monthly

February 2026

This Workplace Research Monthly 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 that were published in January 2026 only.

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Methodology

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Open access, English language article abstracts related to the broad Work, Health and Safety and Rehabilitation/Return To Work themes of Enabling Healthy & Safe Workplaces, Enhancing Employer Capability, Fostering Work Participation, Promoting Mental Health and Adapting to the Future of Work, published in the preceding month are sourced from PubMed© , Emcare©, Ergonomic Abstracts© and Psychinfo© databases at the start of the month. Results are screened by two reviewers, critically reviewed in terms of level of evidence and relevance to an Australian context, and collated.

Description of Evidence Levels Definitions Used in this Review

Articles are arranged from highest to lowest quality based on levels of evidence and relevance, as outlined in table 1 and 2.

1. **Level of Evidence** –Comcare does not conduct critical evaluations of the articles listed in the Workplace Research Monthly, however, certain study designs are scientifically stronger at answering a question. The scoring hierarchy used is presented below.

Level of Evidence	Description
Level 1	Evidence from a systematic/scoping 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.

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. The post-fix AU denotes that the study has been carried out specifically in Australia
B	Study conducted outside Australia and confounders likely to affect generalisability

Enabling Healthy and Safe Workplaces

Health and Wellbeing

Reducing work-related screen-time in healthcare workers during leisure time (Reduce Screen): A randomized controlled trial

The ubiquitous availability of work-related applications on personal devices makes healthcare workers prone to working during leisure time. We tested the hypothesis that an intervention to reduce work-related screen time during a weekend off reduces stress in healthcare workers. Pragmatic parallel design randomized controlled trial between November 2021 and November 2023. Healthcare workers using a smartphone with a work email application were eligible. Randomization was 1:1 to no treatment or a threefold educational intervention to: 1) activate automated responses to emails received, 2) reduce screen time, and 3) uninstall work applications from personal devices. The primary outcome was the change in participants' stress from pre- to post-weekend, measured with the Perceived Stress Scale-10. The secondary outcome was device screen time. Among 815 enrolled participants, 520 responded to the post-intervention survey. The median [Q1, Q3] change from baseline Perceived Stress Scale-10 scores was -2 [-7, 0] in controls and -4 [-9, 0] in the intervention group. The mean difference (intervention - control) in post-intervention Perceived Stress Scale-10 scores, adjusted for baseline stress, was -1.6 (95% CI: -2.6, -0.6; P = 0.002). The median [Q1, Q3] change from baseline screen time was 0 [-2, 1] hours in the controls and -1 [-3, 0] hours in the intervention group. A three-pronged educational intervention targeting work-related screen time among healthcare workers doubled stress reduction during a non-work weekend. Stress reduction in the intervention group was mediated by reduced screen time. Future research should investigate long-term effects and broader implementation of such interventions to promote well-being in the healthcare workforce.

Different associations of stay-at-home exposure with changes in body mass index and cardiometabolic factors depending on occupational physical activity: A longitudinal quasi-experimental design

Objectives: To quantify the short-term impact of an unexpected stay-at-home exposure, caused by a shipment suspension, on body mass index (BMI) and cardiometabolic markers among employees with different levels of occupational physical activity. **Methods**: Health-check records from 8307 workers at a large Japanese automobile manufacturer were linked to company attendance data covering a shipment suspension (January to April 2024). An interrupted time-series assessed BMI trajectories before, during, and after the halt. Among 614 employees who underwent an additional examination in April 2024, mixed-effects models related the duration of stay-at-home to changes in BMI and blood pressure within low-, medium-, and high-intensity job categories. **Results**: Compared with pre-halt trends, medium-intensity and high-intensity workers showed significant level rises in BMI (0.96 kg/m2; 95% CI, 0.56-1.36; and 0.64 kg/m2; 95% CI, 0.24-1.04, respectively) at the onset of the suspension. Mixed-effects analyses showed a positive dose-response between the duration of stay-at-home and BMI gain in high-intensity jobs (0.47 kg/m2 per 20% absent days; 95% CI, 0.37-0.58). Per 20% of scheduled workdays absent, systolic blood pressure was higher in the medium- and high-intensity groups. No significant effects were observed among sedentary workers. **Conclusions**: Employees whose daily energy expenditure relies on job-related physical activity are especially susceptible to weight gain and blood pressure elevations during forced work interruptions. Business continuity plans should embed tailored countermeasures-such as structured exercise programs and phased returns to on-site duties-to safeguard metabolic health during future operational disruptions.

Association between allergic rhinitis and work productivity in a nonclinical setting: A cross-sectional study

Objectives: Allergic rhinitis (AR) is a prevalent condition in Japan that negatively affects workers by reducing their productivity. However, previous studies primarily focused on patients with severe AR symptoms. This exploratory study aimed to examine the association between AR, including mild cases, and reduced work productivity in the general working population. **Methods**: A questionnaire survey was conducted between March and April 2024, recruiting adult workers living in the Kanto region through a health care center and affiliated companies. Absenteeism, presenteeism, and weekly economic costs were compared between individuals with and without AR. Multiple regression analysis was performed to examine the association between AR severity and productivity. A causal mediation analysis was also conducted to explore the indirect effects of depressive symptoms, positive and negative affect, and sleep quality on the association between AR and presenteeism. **Results**: Of the 555 participants, 347 (62.5%) reported having AR, whereas 208 (37.5%) reported not having AR or were unsure. No significant differences were observed in absenteeism or presenteeism between the AR and non-AR/unknown groups. In the AR group, AR severity was significantly associated with increased presenteeism (unstandardized partial regression coefficient B = 4.19; 95% CI, 3.48-4.90; P < .001). Causal mediation analysis revealed a significant total natural indirect effect (TNIE) only for depressive symptoms (TNIE = 5.246; 95% CI, 0.059-10.432; P = .047). **Conclusions**: In the nonclinical setting, the overall impact of AR on work productivity may be limited among Japanese workforces.

Hypertension and its determinants among white-collar workers: A cross-sectional study focusing on lifestyle risk factors and health literacy

Background: Hypertension is a growing public health concern, particularly among white-collar workers exposed to sedentary lifestyles and occupational stress. This study examines the prevalence and determinants of hypertension among commercial bank employees in Sunsari, Nepal, with a focus on lifestyle risk factors and health literacy. **Methods**: A cross-sectional study was conducted among 240 bank employees using stratified random sampling. Data were collected through a self-administered questionnaire adapted from the WHO STEPS survey and clinical measurements of blood pressure, BMI, and waist circumference. Hypertension was classified based on the JNC 8 guidelines. Descriptive statistics, chi-square tests, and independent t tests were used for preliminary analysis. Logistic regression was performed to identify independent predictors of hypertension, controlling for potential confounders. **Results**: The prevalence of hypertension was 62.1% (95% CI 58.6-65.6), with 47.5% in Stage I and 14.6% in Stage II. Males had significantly higher odds of hypertension than females (aOR 2.237, 95% CI 1.170-4.276). Behavioral risk factors such as alcohol consumption (aOR 4.732, 95% CI 1.386-16.160) and frequent processed food intake (aOR 2.640, 95% CI 1.024-7.096) were significantly associated with hypertension. Overweight (aOR 1.819) and obesity (aOR 1.575) were also found to be the major risk factors. Lower health

literacy scores, particularly in healthcare engagement and self-management, were associated with hypertension. **Conclusion**: The high prevalence of hypertension among bank employees highlights the need for workplace interventions promoting healthy lifestyles, routine screenings, and health literacy programs to improve hypertension awareness and management.

Longitudinal analysis of the risk factors for onset and change in tinnitus in the Busselton Healthy Ageing Study

Introduction: Effective prevention and intervention strategies for tinnitus rely on identifying risk factors and understanding its progression over time. However, longitudinal data on these aspects are limited. This study therefore aimed to (1) assess the incidence of tinnitus and identify risk factors associated with tinnitus development, and (2) assess the impact of tinnitus and change in impact over time and identify factors associated with this change. **Methods**: Data from the Busselton Healthy Ageing Study, a population-based cohort of individuals born between 1946-1964, were used. Information on tinnitus presence and impact, general health, ear-related health and mental health was collected from 3863 participants through questionnaires and physical measurements at two time points with a six-year interval. Logistic regression analysis was used to examine risk factors for tinnitus development. Multinomial logistic regression analysis was used to examine factors associated with changes in impact. **Results**: The 6-year incidence of tinnitus was 12.1%. Statistically significant risk factors for developing tinnitus included male gender, higher BMI, larger waist circumference, fair subjective health, hearing loss, occupational noise exposure with occasional use of hearing protection, hyperacusis, migraine, and diagnosed anxiety disorder. Among participants with pre-existing tinnitus, 21.4% reported an increase in tinnitus impact over time, while 16.5% experienced a decrease. Changes in impact were influenced by general health and ear-related health factors. **Conclusion**: The high incidence of tinnitus and its notable impact on daily life emphasize the importance of gaining a better understanding of the broad range of identified risk factors for developing tinnitus and change in impact. The multifaceted nature of these factors, comprising hearing-related issues, general health conditions and psychological aspects, underscore the complexity of tinnitus etiology and impact. By gaining more insight into these factors, we can inform future research efforts aimed at developing targeted prevention and intervention strategies tailored to specific demographic groups.

Determinants of non-adherence to the Mediterranean diet among healthcare workers: A cross-sectional study

Background: Healthy eating habits are a key determinant of physical and mental well-being, particularly in the workplace, where individuals spend most of their daily lives. In hospital settings, the intense pace, shift work, and stressful environments often hinder the ability to maintain a balanced diet. Despite the recognized health benefits of the Mediterranean diet, adherence among healthcare workers remains suboptimal, revealing the need to explore the barriers behind this phenomenon. **Aim**: This study aimed to identify the main factors leading to non-adherence to the Mediterranean diet among healthcare workers and to assess the impact of organizational, psychological, and social variables on dietary behaviour. **Methods**: A cross-sectional study was carried out among overweight and obese employees of the Policlinico Umberto I Teaching Hospital and Sapienza University of Rome. Participants, who had previously discontinued a Mediterranean diet program, completed an ad hoc semi-structured questionnaire exploring

four domains: dietary management, stress and motivation, professional support, and social context. Data were analysed to identify variables significantly associated with non-adherence. **Results**: Thirty-eight workers participated in the study. Non-adherence was significantly correlated with work-related stress (p<0.013), unrealistic goals (p<0.014), and a hectic lifestyle (p<0.035). Social isolation during lunch breaks also reduced motivation (p<0.049), while dietary rigidity was not perceived as a barrier. **Conclusion**: Adherence to the Mediterranean diet among healthcare workers is mainly influenced by psychosocial and organizational factors rather than by the diet itself. Integrated interventions combining nutritional education, stress management, and supportive workplace environments are essential to promote lasting healthy behaviours and overall well-being.

Gender differences in work and well-being in later life

This study examines the longitudinal relationship between work status and subjective well-being (SWB) among older adults in South Korea, with a focus on the roles of gender and education. Using data from the Korean Longitudinal Study of Aging (2006-2020), this study employs fixed-effects regression models to examine within-person longitudinal associations between work and SWB, stratified by gender and educational level. Findings reveal a positive association between working status and SWB for men, but not for women. Both lower- and higher-educated individuals experience a positive SWB when they are working. While women in South Korea are more likely to have lower educational attainment, this does not fully explain the gender gap in the relationship between work status and SWB. Policies should address barriers preventing women from experiencing similar SWB benefits as men, ensuring work supports, rather than strains, their well-being.

Demographic and occupational factors associated with work-life balance among physician assistants/associates: A cross-sectional study

Objective: To examine demographic and occupational attributes associated with work-life balance (WLB) satisfaction among physician assistants/associates (PAs) using a national dataset. **Design**: This is a cross-sectional study using 2023 national data. **Setting**: USA. **Participants**: The study included 149 909 board certified PAs who updated, confirmed or verified their profile questions. **Methods**: Descriptive and bivariate statistics, followed by multivariate logistic regression, were conducted to identify factors associated with WLB satisfaction among PAs. The primary outcome was a binary variable derived from a 7-point scale assessing PAs' satisfaction with WLB. Responses of 'Somewhat', 'Mostly' and 'Completely' satisfied were coded as 'Satisfied', while 'Neither/Nor', 'Somewhat', 'Mostly' and 'Completely' dissatisfied were coded as 'Not satisfied'. Our analytical sample comprised 86,000 PAs who responded to a question inquiring about their satisfaction with WLB. **Results**: Over two-thirds (71.7%) of PAs indicated satisfaction with WLB. The multivariate logistic regression revealed that the types of specialties that PAs practised were among the strongest factors associated with WLB satisfaction. Compared with PAs in primary care, those practising in dermatology (adjusted OR (aOR)=1.83; 95% CI 1.66 to 2.02), general surgery (aOR=1.64; 95% CI 1.48 to 1.83), pain medicine (aOR=1.63; 95% CI 1.41 to 1.89) and hospital medicine (aOR=1.52; 95% CI 1.37 to 1.68) had higher odds of being satisfied with WLB (all p<0.001). Moreover, compared with females, male

PAs indicated nearly 25% higher odds of being satisfied with WLB (p<0.001). Lower odds of WLB satisfaction were observed among PAs with any education debt, those seeing more than 40 patients weekly, those working over 40 hours a week, and PAs in their mid- and late-career stages. **Conclusions**: Our findings revealed that PAs practising in non-primary care specialties had the highest odds of reporting satisfaction with WLB. Identifying factors strongly associated with PA work-life balance can aid in developing targeted interventions. However, further research is needed to understand the intrinsic and extrinsic factors influencing PAs' WLB.

Work Health and Safety

Work participation disparities among LGBTQ+ Australians: Insights from a nationally representative cohort study

This study examined work participation disparities among lesbian, gay, bisexual, transgender, queer, and other sexually and/or gender diverse (LGBTQ+) adults using nationally representative data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. Sexual identity data were collected in wave 20 (2020) from 14,302 participants and gender identity data in wave 23 (2023) from 13,981 participants. Multivariable regression models examined associations between sexual or gender identity and work participation measures. Sexual identity was analysed cross-sectionally (wave 20) and longitudinally (waves 20-23), while gender identity was analysed cross-sectionally (wave 23). Compared to heterosexual participants, those identifying as gay or lesbian were more likely to be unemployed (prevalence ratio [PR] 2.05, 95% CI 1.01-4.14) and less likely to work in trades or manual occupations (PR 0.55, 95% CI 0.36-0.85) or in manufacturing and construction (PR 0.40, 95% CI 0.23-0.72). Bisexual participants had higher prevalence of labour force non-participation (PR 1.91, 95% CI 1.49-2.47) and unemployment (PR 2.05, 95% CI 1.24-3.38), and were less likely to work in agriculture, forestry or mining (PR 0.24, 95% CI 0.08-0.79). Participants of other sexual identities also had higher unemployment (PR 2.78, 95% CI 1.41-5.45). Longitudinally, bisexual participants were more likely to transition out of employment (incidence rate ratio [IRR] 2.08, 95% CI 1.35-3.21) and initiate paid sick leave (IRR 1.42, 95% CI 1.17-1.71), while gay or lesbian participants were more likely to commence working from home (IRR 1.72, 95% CI 1.21-2.44). Transgender and gender diverse participants were less likely to work in manufacturing and construction (PR 0.35, 95% CI 0.17-0.75) and worked fewer hours (PR 0.88, 95% CI 0.79-0.97) than cisgender peers. These findings highlight inequalities in work participation among LGBTQ+ adults, underscoring the need for dedicated research and inclusive workplace policies.

Atopy, asthma symptoms and eosinophilic airway inflammation in British woodworkers

Objectives: Despite reducing exposures to wood dust, woodworkers remain at increased risk of asthma. There have been no recent studies of wood dust exposure, respiratory symptoms or asthma in British woodworkers. This cross-sectional study examined factors associated with asthma in British woodworkers across exposure groups. **Methods**: Participants answered a reporter-delivered work and respiratory questionnaire, and underwent fractional exhaled nitric oxide (FENO), spirometry and specific IgE measurements. Wood dust exposure was assigned through a job-exposure matrix. Multiple regression

evaluated associations between asthma and factors including exposure, atopy and current asthma symptoms (CAS). **Results**: A total of 269 woodworkers participated. Median wood dust exposure was 2.00 mg/m3 (IQR 1.14 mg/m3). CAS, work-related respiratory symptoms (WRRS) and eosinophilic airway inflammation (FENO>40 ppb) were common, present in 46%, 11% and 19% of the cohort, respectively. Atopic woodworkers were more likely to have nasal symptoms (OR 2.13, 95% CI 1.18 to 3.85, p<0.05), WRRS (OR 2.78, 95% CI 1.11 to 6.92, p<0.05), asthma (OR 3.40, 95% CI 1.49 to 7.81, p<0.01) and FENO>40 ppb (OR 2.00, 95% CI 1.03 to 3.88, p<0.05). No effect was seen for airflow obstruction. Symptomatic workers were more likely to have WRRS and asthma (OR 4.29, 95% CI 2.12 to 8.69, p<0.001) but not FENO>40 ppb or airflow obstruction. A dose-response effect with wood dust exposure was not seen. **Conclusions**: Asthma symptoms were prevalent among British woodworkers, even at low exposure levels. Atopy was associated with asthma, particularly among symptomatic woodworkers. Further studies should phenotype woodworkers at risk of asthma and inform approaches to reduce risk.

Risk Assessment

Work hard… drink hard? Occupational, sociodemographic and health determinants of high-risk alcohol consumption among Australian workers

Introduction: Although occupational stressors are acknowledged as contributors to high-risk alcohol consumption, their impact relative to sociodemographic and health factors is not well understood. This study investigated how occupational stressors compare with sociodemographic and health factors in influencing three high-risk drinking patterns among Australian workers. **Methods**: This analysis included 26,255 employed individuals (48.2% female) drawn from 23 waves (2001-2023) of the Household Income and Labour Dynamics in Australia survey. The study conducted multivariate regressions on three types of high-risk drinking: (i) high-risk drinking across the week; (ii) single-occasion high-risk drinking; and (iii) any high-risk drinking. **Results**: Working more than full-time hours was associated with higher odds of high-risk drinking across the week (OR 1.12, 95% CI [1.05, 1.19]). Shift workers were associated with single-occasion high-risk drinking (OR 1.09, 95% CI [1.02, 1.16]). Desiring to work more hours was associated with single-occasion high-risk drinking (OR 1.16, 95% CI [1.09, 1.24]). Workers aged 18-29 years had a twofold increased odds of any high-risk drinking (OR 1.99, 95% CI [1.77, 2.23]), while women had decreased odds (OR 0.11, 95% CI [0.10, 0.13]). Smoking was the modifiable risk factor most strongly associated with any high-risk drinking (OR 2.80, 95% CI [2.60, 3.02]). **Discussion and conclusions:** This analysis found that occupational factors were associated with high-risk drinking; however, their impact was less substantial than sociodemographic and health factors. Interventions targeting risk factors among high-prevalence groups and health promotion campaigns highlighting the health risks associated with high-risk alcohol consumption are warranted.

Militarization of Civilian Labor: Ethical, legal, and occupational health concerns for dockworkers handling military cargo

The growing use of Italian civilian ports and labor forces for the handling of military cargo, particularly in ports such as Livorno, has prompted significant concern over occupational safety, ethical responsibility, and medico-legal accountability. This article examines the systemic, legal, and ethical implications of involving civilian dockworkers in the logistics of armament shipments, particularly those destined for ongoing conflicts such as Gaza. Civilian dockworkers are not adequately trained, insured, or informed to manage high-risk military materials, exposing them to unassessed occupational hazards and moral distress. The absence of informed consent, inadequate occupational surveillance, and limited legal safeguards constitute a breach of labor protection principles. Drawing from international law, Italian occupational legislation, and recent European policy reports, this article provides a contextual legal framework and emphasizes the need for structural reforms, including clearer legal classification of military cargo handling, ethical objection rights, and specialized health surveillance protocols. The discussion integrates a balanced, evidence-based perspective to foster constructive dialogue on demilitarizing civilian labor infrastructures.

Cioffi et al. 2026.
Clinical Therapeutics, vol. 177, no. 1.
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Keywords: Conscientious objection; ethics; health surveillance; war; work.
Evidence Level: 5B
Link: https://clinicaterapeutica.it/ojs/index.php/1/article/view/1419

Ergonomics

Upper crossed syndrome in the workplace: A narrative review with clinical recommendations for non-pharmacologic management

Problem statement: Upper crossed syndrome (UCS), as first described by Janda, refers to a group of muscle imbalances in which tightness in the upper trapezius and levator scapulae dorsally cross with tightness in the pectoralis major and minor muscles, and weakness of deep cervical flexors cross ventrally with weakness of the middle and lower trapezius. Postural alterations from this dysfunction, including forward head, rounded shoulders, and scapular dyskinesis, contribute to upper-back and shoulder pain, particularly among office workers who spend long periods of the workday on a computer. Upper crossed syndrome is a significant contributor to both neck pain and shoulder pain among computer users, which have been rated at 55-69%, and 15-52%, respectively. Despite its prevalence, knowledge about UCS and its treatment remains spotty among primary care physicians. In addition, improvements in workstation ergonomics along with hourly work breaks may be considered as primary prevention strategies for UCS. **Objectives**: This narrative review examines and synthesizes evidence about the epidemiology and diagnosis of UCS, along with clinical recommendations for physiotherapeutic approaches to treatment. Ergonomic measures in the workplace, including changes in the design of computer workstations so that both the keyboard and monitor are at the proper heights to minimize the risk of long-term musculoskeletal disorders, are also critical. **Methods**: The first author, a Doctor of Behavioral Health, performed the initial literature search, which was reviewed by the second author, a PhD in sports injury epidemiology. The third author, a chiropractor and practice owner, provided clinical recommendations for stretching and strengthening exercises, which were also described in the literature. **Discussion**: While easily treatable when caught early, UCS may become resistant to noninvasive approaches over time, and more severe pathologies of the neck and shoulder, including impingement, thoracic outlet syndrome, and cervicogenic headaches may result. Because there is no specific ICD code for UCS, it is important for physicians to recognize the early signs, consider them in the context of workplace-related injuries, and understand physiotherapeutic strategies for symptom resolution.

Russin et al. 2026.
International Journal of Environmental Research and Public Health, vol. 23, no. 1.

Occupational Exposure

A health-based recommended occupational exposure limit for isoflurane and sevoflurane using experimental animal data based on a systematic review and dose-response analysis

Epidemiological studies have raised concerns about health risks from occupational exposure to inhalation anesthetics. This study aimed to systematically search, select and appraise the evidence from animal studies to derive occupational exposure levels (OELs) for isoflurane and sevoflurane. Twenty-four studies for isoflurane and 7 studies for sevoflurane were included, which reported on neurological and fertility outcomes. When ranking adverse outcomes by derived benchmark dose lower bounds (BDMLs), male fertility was considered as the most critical effect for both substances. Assessment factors cover uncertainties regarding interspecies and intraspecies differences. Using the BMDL as point of departure we derived 8-h time-weighted average (TWA) OELs of 0.9 mg/m3 (0.12 ppm) for isoflurane and of 0.8 mg/m3 (0.09 ppm) for sevoflurane. For peak exposures, 15-min TWA OELs of 30 mg/m3 (3.9 ppm) and 25 mg/m3 (3.0 ppm) were derived, respectively. These levels are expected to protect workers from health effects caused by these anesthetic gases.

The Role of Susceptibility in the Association Between Exposures and Occupational Contact Dermatitis: A Scoping Review

The objective of this review is to identify individual susceptibility factors and determine their role in the association between work-related exposures and contact dermatitis (CD). A scoping review was conducted using Medline, Embase, and CINAHL. Cohort and case-control studies were included for all types of CD, and cross-sectional studies for allergic contact dermatitis (ACD). In the absence of meta-analysis, we drew qualitative inferences summarising the findings. Twenty-one studies, primarily cross-sectional (n = 18), investigated how 44 individual susceptibility factors influenced associations between 53 work-related exposures (from six exposure categories) and CD. These factors were grouped into five categories: demographic, socioeconomic, host-related intrinsic factors, lifestyle, and exposures outside work. The factors variously mitigated, amplified, or had no effect on the exposure-CD association. The role of individual susceptibility factors in work-related exposure-CD associations remains underexplored and inconclusive. Determining their individual contributions is challenging, as studies often adjust for multiple factors, with inconsistent influence on the association. Age, sex, atopic history, hand eczema, smoking, and ethnicity may influence CD risk and should be considered in studies examining work-related exposure-CD associations. Further research is needed to clarify the role of individual susceptibility factors and guide effective prevention strategies for occupational CD.

Oil mists and vapours: A review of exposure and toxicity, with dose descriptors from inhalation studies

Inhalation of oil mists and vapours may induce adverse effects. Here we review the literature on human exposure to oil mists and vapours and their toxicity following inhalation exposure. We collected data on inhalation of all types of oils, on all toxicity endpoints other than genotoxicity and cancer. Toxicological dose descriptors (no-observed-adverse-effect concentrations (NOAECs) and lowest-observed-adverse-effect concentrations (LOAECs)) were collected to identify exposure levels at which toxicity occurs. Occupational mean exposure concentrations typically range from 0.2 to 5 mg/m3 for mist and up to 36 mg/m3 for vapours during oil drilling. Affected toxicological endpoints in humans of exposure to refined oil include lung function, lung pathology (including fibrosis), asthma and irritation of nose and throat. Sudden death has been reported after acute exposure to hydrocarbon gas and vapour (e.g. during oil tank hatch operation, potentially involving oxygen deficiency). In animals, endpoints affected include lung function, lung pathology, increases in pulmonary immune cells, decreased body weight and in one study on monkeys also lethality. Dose descriptors in human studies with exposure to mineral oil mists included LOAECs as low as 0.3, 0.4. 0.5, 0.7 and 2.2 mg/m3 concerning lung function/respiratory symptoms. In general, higher dose descriptors were observed in animal studies, e.g. LOAECs for lung pathology of 50 mg/m3 in rats and 63 mg/m3 in monkeys. In conclusion, toxicological effects were observed in humans at occupationally relevant exposure levels. The collected data inform hazard assessment of airborne oil at the workplace and in society.

Hadrup et al. 2026.
Toxicology, vol. 519.
User License: : *Creative Commons - Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/)*
Keywords: Crude oil; epidemiology; fog oil; petroleum; synthetic oil.
Evidence Level: 1A
Link: https://linkinghub.elsevier.com/retrieve/pii/S0300-483X(25)00273-2

Firefighter exposures during structural fires: An overview of real-world data

This paper examines firefighter exposure to emissions during actual firefighting in building scenarios. The focus is on actual exposure, not small-scale lab tests, to identify research gaps in light of the International Agency for Research on Cancer (IARC) classification of firefighting as an occupation with a heightened risk for certain types of cancer. The work is based on a systematic literature review of all literature published up to 2025, including only studies that measured both emissions and firefighter exposures during actual structure fires. Of the 6860 articles identified from various databases and sources, 76 articles correspond to the inclusion criteria for this review, following a rigorous screening process. Our findings show that, although substantial research has been conducted over the past few decades, the majority of the studies were concentrated in the United States. Fewer studies were identified from Australia, Canada, and select European countries, while no studies identified originated from Africa. Female (women) firefighters were either entirely excluded or represented less than 10 % of study cohorts. These findings underscore critical gaps in both geographic and demographic representation in the existing body of research. Additionally, firefighter exposure during overhaul operations and to ultra fine particles in fire emissions remain largely understudied.

Arinaitwe et al. 2026.
Science of the Total Environment, vol. 1012.
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Keywords: Building fire; fire emissions; firefighter exposure; firefighting; structural fire.
Evidence Level: 1A
Link: https://www.sciencedirect.com/science/article/pii/S0048969725028530?via%3Dihub

Impact of interventions to prevent asbestos-related respiratory disease in an exposed worker registry using a simplified G-computation

The Ontario Asbestos Workers Registry is a regulatory exposure registry obligating employers to report the number of work hours with asbestos-containing materials for each of their workers. Currently, each worker is notified of the need for a medical examination once they have accrued 2000 reported hours of work with asbestos. We sought to evaluate the impact on disease prevention of alternative policies limiting asbestos work hours among registry participants. A cohort of 26 164 asbestos workers were followed for cancer and nonmalignant disease diagnoses between 1986 and 2019. Analyses of the association between cumulative asbestos work hours and respiratory disease incidence rates showed substantially elevated disease rates well before reaching 2000 asbestos work hours. Using a simplified application of parametric G-computation (G-POSH), limiting cumulative asbestos work hours to 100 h would have prevented 76 asbestosis, 36 pulmonary fibrosis, 27 mesothelioma, and 79 lung cancer cases at the end of follow-up compared to the observed risk in the cohort. Limiting exposure to 2000 asbestos work hours had a smaller but still substantial impact on disease prevention, particularly among workers in the construction industry. Regulatory agencies should intervene sooner to prevent respiratory disease among workers in the registry.

DeBono et al. 2026.

Association of radon exposure with lung cancer: Serum biomarkers and computed tomography evidence from male miners

The objective of this research is to investigate the association between occupational radon exposure and pulmonary health outcomes in male miners from Chongqing, China. Between June 2022 and December 2023, 110 miners were enrolled in this cross-sectional study. Personal radon exposure levels were measured using passive cumulative dosimeters, with pulmonary health assessed through radiologist-interpreted low-dose computed tomography (CT) scans and serum biomarker analysis (CEA, CYFRA21-1, NSE, and CA125) via ELISA. Multivariable analyses revealed strong dose-response relationships between radon exposure and both serum biomarkers and CT abnormalities. high radon exposure predicted substantial biomarker elevations including a 2.45-fold increase in CYFRA21-1 (β = 0.39, 95 % CI 0.25-0.54, p < 0.001), 1.60-fold increase in CEA (β = 0.20, 0.05-0.35, p = 0.008), and 3.58-fold increased CT abnormality risk (OR = 3.58, p = 0.023). Mediation analysis identified CYFRA21-1 as accounting for 69 % (p = 0.024) and CEA for 24.7 % (p = 0.036) of radon's effect on CT abnormalities. These findings demonstrate that occupational radon exposure contributes to pulmonary damage through both direct effects and biomarker-mediated pathways, with CYFRA21-1 and CEA emerging as potential early indicators of lung cancer in radon-exposed populations.

Zhou et al. 2026.

Occupational exposure to pesticides and epigenetic age acceleration in the lifelines cohort study

Objective: Pesticide exposure has been implicated in age-related diseases, whereas its association with biological aging remains unclear. This study aimed to examine the association between occupational pesticide exposure and epigenetic age acceleration. **Methods**: We analyzed cross-sectional data from 1622 participants in the Dutch general population-based Lifelines cohort with available DNA methylation data. Occupational pesticide exposure and its subclasses (herbicides, insecticides, fungicides) were assessed

using self-reported occupation combined with the ALOHA + job exposure matrix. Age acceleration was estimated using seven epigenetic aging measures including the Horvath, Hannum, Skin & Blood, PhenoAge, GrimAge, DunedinPACE, and DNA methylation-based telomere length (DNAmTL). Multivariable linear regression with inverse probability weighting was applied to estimate associations, adjusting for age, sex, education, income, smoking status, and co-exposure to dusts and solvents. **Results**: Occupational exposure to general pesticides was associated with higher age acceleration based on the Hannum clock ($\beta = 1.15$, 95 % CI: 0.18 to 2.11). The associations of the pesticide subclasses with the Hannum were all statistically significant, with the strongest observed for herbicides ($\beta = 1.72$, 95 % CI: 0.69 to 2.75). No significant associations were found with second- or third-generation clocks or with DNAmTL. Analyses restricted to current workers yielded consistent results, and herbicide exposure remained statistically significant in cumulative exposure analysis. **Conclusion**: Occupational pesticide exposure was consistently associated with accelerated epigenetic aging, as measured by first-generation clocks such as the Hannum, with herbicides showing the most pronounced effect. Longitudinal occupational cohorts are warranted to confirm these associations and clarify the underlying mechanisms.

Zuo et al. 2026.

Occupational exposure to respirable crystalline quartz and the risk of incident acute myocardial infarction

We aimed to investigate the association between occupational exposure to respirable crystalline quartz (RCQ) and acute myocardial infarction (AMI) in a Danish register-based cohort (DOC*X Dust, n = 903,415). Through 1976-2017, information on occupation was linked to quantitative exposure estimates of RCQ, obtained from the job-exposure matrix of SYN-JEM. The follow-up period (1996-2018) counted 19,357,326 person-years, where 35,511 first-time AMIs occurred, according to register-based hospital contacts. Incidence rate ratios (IRRs) for AMI based on cumulative, recent, and maximum exposure were computed using Poisson regression adjusted for socio-economic factors, comorbidities, air pollution, and other occupational exposures such as noise, physically demanding work, exposure to diesel exhaust, and job strain. For cumulative exposure, the IRR for AMI in the unadjusted model was highest in the two lowest exposed quartiles (IRR for Q1 = 1.19 (95%CI: 1.13-1.25), IRR for Q2 = 1.12 (95%CI: 1.06, 1.17)). However, in the fully adjusted model, these associations were no longer significant and even inverse for exposed above 25th percentile. The lowest IRR was observed in the highest RCQ exposure quartile (IRR = 0.87, (95%CI: 0.83-0.92)). In general, the RCQ exposure levels in the DOC*X Dust cohort were presumed to be lower than in countries that - contrary to Denmark - have an active mining industry. In conclusion, no increased risk of AMI due to RCQ exposure was observed, but cautious interpretation is warranted because of potential bias from the healthy worker survivor effect.

Wils et al. 2026.

Methods to derive uncertainty intervals for lifetime risks for lung cancer related to occupational radon exposure

Lifetime risks are a useful tool in quantifying health risks related to radiation exposure and play an important role in the radiation detriment and, in the case of radon, for radon dose conversion. This study considers the lifetime risk of dying from lung cancer related to occupational radon exposure. For this

purpose, in addition to other risk measures, the lifetime excess absolute risk (LEAR) is mainly examined. Uncertainty intervals for such lifetime risk estimates and corresponding statistical methods are rarely presented in the radon literature. Based on previous work on LEAR estimates, the objective of this article is to introduce and discuss novel methods to derive uncertainty intervals for lifetime risk estimates for lung cancer related to occupational radon exposure. Uncertainties of two main components of lifetime risk calculations are modeled: uncertainties of risk model parameter estimates describing the excess relative risk for lung cancer and of baseline mortality rates. Approximate normality assumption (ANA) methods derived from likelihood theory and Bayesian techniques are employed to quantify uncertainty in risk model parameters. The derived methods are applied to risk models from the German "Wismut" uranium miners cohort study (full Wismut cohort with follow-up up to 2018 and sub-cohort with miners first hired in 1960 or later, designated as "1960+ sub-cohort"). Mortality rate uncertainty is assessed based on information from the WHO mortality database. All uncertainty assessment methods are realized with Monte Carlo simulations. Resulting uncertainty intervals for different lifetime risk measures are compared. Uncertainty from risk model parameters imposes the largest uncertainty on lifetime risks but baseline lung cancer mortality rate uncertainty is also substantial. Using the ANA method accounting for uncertainty in risk model parameter estimates, the LEAR in % for the 1960+ sub-cohort risk model was 6.70 with a 95% uncertainty interval of [3.26; 12.28] for the exposure scenario of 2 Working Level Months from age 18-64 years, compared to the full cohort risk model with a LEAR in % of 3.43 and narrower 95% uncertainty interval [2.06; 4.84]. ANA methods and Bayesian techniques with a non-informative prior yield similar results, whenever comparable. There are only minor differences across different lifetime risk measures. Based on the present results, risk model parameter uncertainty accounts for a substantial share of lifetime risk uncertainty for radon protection. ANA methods are the most practicable and should be employed in the majority of cases. The explicit choice of lifetime risk measures is negligible. The derived uncertainty intervals are comparable to the range of lifetime risk estimates from uranium miners studies in the literature. These findings should be accounted for when developing radiation protection policies, which are based on lifetime risks.

Sommer et al. 2026.
Health Physics, vol. 130, no. 1.
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Keywords: Cancer; epidemiology; radon; risk analysis.
Evidence Level: 4B
Link: https://journals.lww.com/health-physics/fulltext/2026/01000/methods_to_derive_uncertainty_intervals_for.3.aspx

Occupational exposures and kidney cancer among 25 000 male offshore petroleum industry workers: Relative risks and healthy worker survivor bias

Kidney cancer has been a suspected occupational disease in petroleum workers. Health conditions that are linked to kidney cancer may prompt termination or change of work and thereby restrict occupational exposures in high-risk individuals, creating a healthy worker survivor bias (HWSB). We examined associations between occupational exposures and kidney cancer among males in the Norwegian offshore petroleum workers cohort using a case-cohort design, with 169 incident cancers identified by linkage to national registry data (1999-2021) and a subcohort of 2090 noncases, all employed between 1965 and 1998. Relative risks (hazard ratios [HRs]) by cumulative exposure to benzene, crude oil, chlorinated degreasing agents (CDA), asbestos, welding fumes, or surface treatment (priming, painting) were estimated by weighted Cox regression. Inverse exposure-response trends suggested HWSB, reinforced by analyses of necessary components of HWSB. Bias was partly alleviated by adjustment for total employment duration and by 20-year lagging of cumulative exposure to benzene, crude oil, or CDA. Workers in surface treatment (ever vs never) showed increased HR = 2.22, 95% confidence interval [CI], 1.04-4.72 (9 cases, only). For asbestos and welding fumes, the initial inverse trends largely remained after adjustment. In sum, we could neither confirm nor exclude an occupational impact on kidney cancer.

Shala et al. 2026.
American Journal of Epidemiology, vol. 195, no. 1.

Occupational radiation exposure of zoo veterinarians during x-ray procedures: A real-time dosimetry study

Objectives: We used real-time dosimetry for the quantitative evaluation of occupational radiation exposure among zoo veterinarians and animal keepers during x-ray procedures to identify key procedural and contextual determinants of exposure variation. **Methods**: This retrospective observational study analyzed 251 radiographic procedures at multiple zoological facilities in Japan. Occupational exposure was measured in real time with a semiconductor dosimeter that recorded the personal dose equivalent, Hp(10), at 1-second intervals. Procedural variables included professional role, manual restraint, sedation or anesthesia, equipment type, tube voltage (kVp), and tube current-time product (mAs). Between-group comparisons were conducted using nonparametric tests, and multiple linear regression was used to identify the independent predictors of occupational exposure. **Results**: The overall median Hp(10) per procedure was 0.35 (IQR: 0.15-0.99) μSv. Veterinarians received significantly higher doses than animal keepers (P = .006). Elevated Hp(10) values were associated with procedures involving large-bodied carnivores, performed without manual restraint or sedation. Multivariate analysis identified 5 significant predictors-professional role (β = -.75), manual restraint (β = -.24), tube voltage (β = .43), tube current-time product (β = .11), and large-animal group (β = .34)-explaining 60.4% of the variance (adjusted R^2 = 0.604). **Conclusions**: Despite the overall low exposure levels, some procedures resulted in Hp(10) values exceeding 10 μSv. A combination of procedural and contextual factors influenced exposure. These findings underscore the importance of comprehensive radiation-protection strategies, including optimized workflows, appropriate use of sedation, and standardized operator protocols, in alignment with international dose-optimization principles.

Seroprevalence and risk factors for Brucella species and Coxiella burnetii exposure in a cross-sectional serosurvey of occupationally exposed groups in peri-urban Lomé, Togo

Background: Brucella species and Coxiella burnetii have been detected in livestock populations in Togo. Populations exposed to livestock ruminants through their occupation may be at increased risk of infection. **Methods/principal findings**: A cross-sectional serosurvey was conducted in 108 abattoir and 81 dairy farm workers (from 52 dairy farms) in peri-urban Lomé, Togo in 2019-2020. Structured questionnaires were used to collect data on participant livestock contact and dairy product consumption. Sera were tested using the Rose Bengal plate agglutination test (RBT) and the indirect Brucella IgG Enzyme-Linked Immunosorbent Assay (ELISA) for Brucella, and the IgG ELISA for Coxiella burnetii in Phase 1 and in Phase 2. Fresh bulk milk samples from farms were tested using an indirect milk ELISA for Brucella IgG. The association between seropositivity and exposure variables was examined using logistic regression with robust standard errors to account for site-level clustering. Eighteen workers (9.5%, 95% CI 5.5-16.0) were Brucella seropositive. Twenty-eight percent (95% CI 22.5-34.3) of workers were seropositive for C. burnetii. Twenty of fifty-one farms which gave milk samples tested positive for Brucella antibodies (39.2%, 95% CI 26.6 - 53.4%). Farmworkers had nearly twice the crude odds of being Brucella seropositive compared to abattoir workers (OR 1.93, 95% CI: 0.94-3.93, p = 0.07). After adjusting for age, working on farms with animal ill health, a

positive milk test, participating in small ruminant husbandry and assisting with cattle abortion were all associated with increased odds of seropositivity. Farm and abattoir workers who consumed raw milk at least every month were more likely to be seropositive for Brucella species (OR 3.79, 95% CI: 2.34-6.13, p < 0.001) while participants who consumed fermented milk and cheese had greater odds of being seropositive for C. burnetii (OR 1.59, 95% CI: 1.26-2.00, p < 0.001 and OR 1.70, 95% CI: 0.97-2.98, p = 0.07 respectively). **Conclusions**: Livestock workers in peri-urban Lomé have been exposed to both Brucella and Coxiella burnetii bacteria. The widespread consumption of raw dairy products and lack of personal protective equipment (PPE) use is of concern as both dairy consumption and participation in animal husbandry activities have been seen to increase odds of seropositivity for both pathogens. A One Health prioritization of zoonotic disease would help to bring together the relevant sectors to adequately resource prevention and control of zoonoses of public health concern in Togo, which may particularly impact workers in close contact with animals.

The mediating role of internal motivation on the relationship between ethical leadership and employee performance in hospitals in Northern Jordan

Objective: The study's main aim is to investigate the influence of ethical leadership (EL) on employee performance (EP) through internal motivation (IM) from the perspectives of clinical and administrative employees working in hospitals in northern Jordan. **Method design**: The study used a descriptive, correlational cross-sectional quantitative design. **Participants and setting**: Data were collected from 330 clinical and administrative employees between February and March 2024 using convenience sampling from five hospitals-2 public, 2 private, and 1 teaching hospital-in different geographical areas in northern Jordan. The study hypotheses were tested using a hierarchical multiple linear regression. **Results**: The study results revealed a statistically significant association between ethical leadership, internal motivation, and employee performance. Moreover, the results showed that internal motivation statistically mediates the relationship between ethical leadership and employee performance. **Conclusion**: The current study's findings can serve as an empirical basis for hospital decision-makers to plan and implement programs and/or establish or revise policies for the target population, improving employees' performance, achieving desired outcomes, and ultimately providing better care for patients.

Meteorological conditions hardly influence measurement strategy and measured respirable dust and quartz concentrations in the industrial minerals sector

Background: Respirable dust and quartz are important occupational hazards, yet the effects of meteorological conditions on these concentrations remain poorly understood and predominantly theoretical. **Objective**: Using respirable dust and quartz data from the Industrial Minerals Association Europe Dust Monitoring Programme (IMA-DMP) and outdoor meteorological data from the ERA5-LAND hourly land data, we aimed first to determine whether meteorological conditions had an impact on the sampling strategy for these exposures and, second, to describe the association between outdoor meteorological conditions and respirable dust and quartz concentrations. **Methods**: We linked the exposure data for 153 sites across Europe and outdoor meteorological data by date and IMA site location. We used descriptive statistics to compare the meteorological conditions (temperature, precipitation, and wind speed) on measurement and non-measurement days. A linear mixed-effects model was used to

investigate the relationship between meteorological variables and respirable dust and quartz concentrations. The model includes adjustments for period-specific time trends, minerals produced, job site, and job function. **Results**: Meteorological conditions on measurement and non-measurement days were similar. We estimate a 2.3% and 5.9% increase in dust and quartz concentrations for every 10 °C increase in temperature. A 10-fold increase in precipitation is estimated to reduce dust and quartz concentrations by -2.6% and -3.1%, respectively. A 10-fold increase in wind speed is estimated to reduce quartz concentrations by -9.0%, and this association was not statistically significant for dust. Temperature had the strongest effect on personal concentrations, followed by wind speed. Associations were generally stronger for respirable quartz than respirable dust. **Conclusions**: Within the IMA-DMP, meteorological conditions did not affect the measurement strategy for dust and quartz and had a small effect on concentrations measured at 153 sites across Europe. Thus, non-random, biased sampling schemes would result in a slight (<10%) overestimation or underestimation of long-term respirable dust and quartz concentration depending on the meteorological conditions, justifying the collection of meteorological data during sampling.

Trajectories of cigarette smoking and exposure to welding fumes and their impact on lung cancer risks: A latent class modelling approach

Objectives: Traditional epidemiological approaches usually assume a constant relationship between cumulative exposure and disease, which implies that exposure duration and intensity contribute equally to the studied outcome. But individuals with the same cumulative exposure but different temporal exposure patterns may show different risks. Trajectory classification is a good way to assess exposure-risk associations and leads to a better understanding of lifetime variability in exposure levels. Therefore, this study aimed to estimate lung cancer risk according to the exposure trajectory classes on welding fumes and cigarette smoking. **Design**: Two population-based German case-control studies. **Participants**: 3498 male lung cancer cases and 3539 male control subjects. **Methods**: Separate latent class mixed models (LCMM) were determined to identify profiles of exposure trajectories of cigarette smoking and occupational exposure to welding fumes. To investigate the risk of lung cancer by class membership, ORs with 95% CI were estimated via multiple logistic regression analyses. **Results**: LCMM each identified four latent classes of smoking and welding-fume exposure. Classes of smokers showed much higher risk of lung cancer compared with never smokers or subjects exposed to welding fumes. Smokers in one class characterised with the highest exposure over the past 10 years had the highest adjusted lung cancer risk (OR=39; 95% CI 29 to 53). For welding, the highest lung cancer risks were found for the class in which exposure to welding fumes in the past 10 years prior to the diagnosis of lung cancer was highest and the duration of welding was also quite high (OR=1.71; 95% CI 0.92 to 3.15). **Conclusions**: In summary, LCMM opens a new perspective on dose-effect relationships and could be employed to complement established epidemiological methods.

Prediction of relevant exposure sources to aggregate chemical exposures from general and occupational environments: Exploration of a decision tree approach

Objectives: To understand the total exposure of a human population to a chemical, it is necessary to aggregate exposures from different exposure routes (ingestion, inhalation, dermal uptake) and exposure sources (eg food, air, consumer products) from different environments (ie general, occupational, consumer use). Preventive actions or regulatory decisions require decisions to be taken on priority exposure routes and sources. This study explores the development of a quantitative decision tree to identify relevant exposure sources in the context of aggregate exposure. As a case study for spray applications, it focuses on joint exposure to a specific chemical in a consumer product through domestic use of hairspray, and exposure at the workplace involving surface spraying, such as spray application of paints. **Methods**: Determinant of the exposure models ART (for workers) and ConsExpo (for the general population) were used to generate a wide range of realistic exposure scenarios. The dominance of one source over another was analyzed through pairwise random comparisons. Exposure estimates from one source containing a specific determinant are compared with those from the other source, scaled by a dominance ratio that defines how much higher one source's exposure must be to be considered dominant. For each comparison, the number of times one source exceeds the other by at least a dominance ratio is counted, resulting in the occurrence. The occurrence is compared with a predefined threshold (eg 80%). If the threshold is met or exceeded, the higher-contributing source is considered dominant and no exposure aggregation is needed; otherwise, aggregation of both sources is recommended. **Results**: The findings indicated that the use of high- or medium-specification glove boxes, as forms of permanent encapsulation or encasing of the emission source, results in occupational exposure that is negligible compared with the exposure from consumer product use. When these glove boxes were used, hair spray exposure was the dominant source in 89% and 82% of cases, for high and medium specifications, respectively. A spraying activity with surface liquids performed outdoors (close to buildings) showed a significant trend toward occupational exposure dominance in 81% of cases. Using these three determinants, a three-layer quantitative decision tree was built to help users quickly decide whether aggregation was relevant before performing calculations. Aggregation was suggested in 91% of cases and avoided it in 9%.

Evaluation of occupational exposure to airborne quartz in the cutting and grinding of ceramic tiles

Crystalline silica was categorized by the International Agency for Research on Cancer as a known human carcinogen. Activities related to the processing of ceramic tiles, releasing crystalline silica, may vary considerably in terms of hours worked per day and days worked per week. This variability could be particularly high for craftsmen who process ceramic materials directly on-site during installation. The aim of this study is to measure the likely exposure to respirable crystalline silica (RCS) during ceramic tiles installation, evaluating the exposure to RCS of workers processing these tiles. Exposure assessments to RCS were conducted via both fixed-site and personal sampling for 2 working hours. The measured concentrations were calculated as 8-h time-weighted average (TWA) exposures, assuming no further RCS exposure in the time period. The permitted exposure time, not to exceed the occupational exposure limit (OEL) value, was then calculated also considering the assigned protection factor of selected respiratory protective equipment. The results of this study, considered as a worst-case simulation, show that, during the processing of ceramic tiles releasing RCS, the worker exposure can be very high (up to 240.9 µg/m3), exceedance of several OELs, including the European OEL of 100 µg/m³. Even working for a few hours a day, the RCS 8-h TWA OEL is likely to be exceeded. Inhaled exposure concentrations can be reduced by using appropriate respiratory protection, by a factor equal to 10 or 20. The assumption of this work was that (i)

the cutting/grinding times are not always necessarily equal to 2 h and that (ii) these processes are not characterized by pre-established and continuous processing times. For these reasons, it is important to carefully evaluate the duration of exposure to RCS during the various tasks/activities performed, as these may vary depending on different factors.

Comprehensive urinary metabolite profiles of workers exposed to aniline, 2,4-dimethylaniline, and 2-methylaniline

Objectives: Biological exposure monitoring is particularly useful for understanding skin absorption of hazardous substances; however, existing measurement methods for aromatic amines show room for improvement, as they focus only on unchanged compounds. This study aimed to determine urinary concentrations of the unchanged compounds and metabolites of 3 aromatic amines (aniline, 2,4-dimethylaniline [m-xylidine], and 2-methylaniline [o-toluidine]) following enzymatic hydrolysis pretreatment, to calculate their proportions, and to assess markers for occupational biological exposure monitoring. **Methods**: Urine samples were collected at the end of work shifts on consecutive days from 11 workers at a plant handling aromatic amines. Samples were enzymatically hydrolyzed using glucuronidase and sulfatase. The urinary concentrations of 25 substances were determined using liquid chromatography-tandem mass spectrometry. **Results**: After exposure to the 3 aromatic amines, the major urinary excretion types were benzene ring-hydroxylated compounds, ring-hydroxylated and N-acetylated compounds, and side-chain methyl group oxides. The presence of unchanged and N-acetylated compounds was minor. Metabolism and urinary excretion were relatively different between the workers in our study and reported values from animal studies. **Conclusions**: Excluding metabolites with low specificity, the sum of unchanged compounds and primary metabolites in urine could be a useful marker for biological exposure monitoring. Regarding aniline exposure, the relevant markers are the sum of aniline, N-acetyl-4-hydroxyaniline, and 2-hydroxyaniline. For 2,4-dimethylaniline exposure, the markers are the sum of 2,4-dimethylaniline, N-acetyl-4-carboxy-2-methylaniline, and 6-hydroxy-2,4-dimethylaniline. For 2-methylaniline exposure, the markers are the sum of 2-methylaniline, N-acetyl-4-hydroxy-2-methylaniline, 4-hydroxy-2-methylaniline, and 6-hydroxy-2-methylaniline. Urine sampling is recommended at the end of work shifts on consecutive working days.

Percutaneous metal absorption from airborne particulate matter: Evaluating the role of skin barrier integrity

Human exposure to airborne particulate matter (PM), particularly its metal content, represents a growing public health concern due to its potential toxicological effects. While inhalation is generally considered the main exposure route, dermal absorption remains insufficiently explored. This study examined the in vitro percutaneous penetration of selected metals (As, Cd, Cr, Cu, Mn, Mo, Ni, Pb, V) from certified urban road dust (NIST SRM® 1649b) using human skin under both intact and abraded conditions. The particles were applied as a 1 % w/v suspension in artificial sweat medium (pH 4.5), and Franz diffusion cells were used to evaluate metal permeation over 24 h. Complementary solubility tests in simulated sweat solution buffered topH 4.5 and 6.5 showed negligible pH dependence. Scanning electron microscopy revealed submicron

primary particles (mean diameter 1.19 ± 0.78 μm) with a high tendency to form agglomerates, accounting for discrepancies with the hydrodynamic size reported in the SRM certificate. No detectable skin absorption was observed for Cd, Cr, and Cu, while the remaining metals showed enhanced permeation in damaged skin, confirming the role of barrier disruption in facilitating transdermal transport. Ni, Pb, and Mn exhibited the highest permeation levels, raising concern due to their sensitizing and toxic potential. These findings provide novel insights into the dermal bioavailability of PM-associated metals and highlight the importance of including skin exposure as a relevant pathway in environmental health risk assessments, especially for populations with compromised skin integrity or in high-exposure occupational settings.

Marussi et al. 2026.
Science of the Total Environment, vol. 1010.
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Keywords: Dermal exposure; franz diffusion cell; heavy metals; human skin; urban dust.
Evidence Level: 5B
Link: https://linkinghub.elsevier.com/retrieve/pii/S0048-9697(25)02782-2

Heat stress and social dialogue in Greece

This paper explores the current landscape of collective bargaining agreements in Greece, alongside the broader legislative framework governing occupational heat stress. The findings reveal that the existing framework regulating occupational heat exposure remains general and insufficient. The specific circulars on heat stress prevention do not carry the same legal weight as laws or presidential decrees. Therefore, the adoption of dedicated legislation addressing occupational heat stress is considered essential. Effective protection requires the implementation of preventive measures across all sectors, for all categories of workers, and throughout all periods-not only during officially declared heatwaves. Labour inspectorate workplace inspections should be intensified, as implementation legislation remains limited. Heat stress provisions are rarely included in collective bargaining agreements. The weakening of collective bargaining following the economic crisis has contributed to this gap. The role of trade unions and workers' occupational safety and health (OSH) representatives is critical in strengthening collective bargaining and safeguarding workers from occupational risks. To improve heat stress management, the study highlights the need for expanded awareness-raising initiatives, sector-specific training, enhanced understanding and use of the Wet Bulb Globe Temperature (WBGT) index, systematic recording of worker morbidity and mortality, and strengthened research efforts on heat stress prevention.

Koukoulaki et al. 2026.
Industrial Health, vol. 64, no. 1.
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Keywords: Collective agreements; heat stress; national legislation; occupational safety and health; workers' participation.
Evidence Level: 5B
Link: https://www.jstage.jst.go.jp/article/indhealth/64/1/64_2025-0111/_article

Lean six sigma for sharps waste management and occupational biosafety in emergency care units

Occupational exposure to sharps waste represents a critical challenge for public health systems, directly affecting healthcare workers' safety, institutional costs, and environmental sustainability. This study aimed to analyze sharps waste management practices and to structure improvement actions for biosafety governance in Brazilian Emergency Care Units (ECUs) through the application of the Lean Six Sigma (LSS) and DMAIC method (Define, Measure, Analyze, Improve, and Control). A single multiple-case study was conducted across three public units in different regions of Brazil, combining direct observation, regulatory checklists based on ANVISA Resolution No. 222/2018 (RDC), and cause-and-effect (5M) analysis. The diagnostic phase identified recurrent nonconformities in labeling, documentation, and internal transport routes, primarily due to managerial and behavioral gaps. Based on these findings, the DMAIC framework supported the development of a low-cost, evidence-based action plan that outlined proposed

interventions, including visual checklists, standardized internal routes, and key performance indicators (KPIs), intended to strengthen biosafety traceability and occupational safety. The se proposed actions are expected to support continuous learning, staff engagement, and a culture of shared responsibility for safe practices. Overall, the study provides a structured basis for future implementation and empirical validation of continuous improvement initiatives, aimed at enhancing public health governance and occupational safety in resource-constrained healthcare environments.

Lack of guidelines for cold exposure among vulnerable outdoor workers

Low temperatures pose a significant yet underrecognized occupational health risk, particularly for outdoor workers with climate-sensitive medical conditions such as diabetes, cardiovascular disease, and respiratory disorders. While cold exposure is often associated with Arctic and high-altitude regions, even temperate and warmer climates experience severe winter temperature drops, placing a broad spectrum of outdoor workers at risk. Despite extensive research highlighting the adverse health effects of cold stress and its contribution to global mortality rates, occupational health and safety (OHS) guidelines remain disproportionately focused on heat-related risks, neglecting the unique vulnerabilities of workers exposed to extreme cold. This paper critically examines the gaps in current OHS policies and regulations regarding cold exposure, emphasizing the urgent need for evidence-based guidelines that specifically address the needs of outdoor workers with preexisting health conditions. By integrating medical, environmental, and occupational safety perspectives, we propose a framework for comprehensive protective measures, including improved risk assessment protocols, workplace adaptations, and regulatory interventions. Addressing this oversight is essential not only for safeguarding workers' health but also for promoting sustainable labor practices and enhancing resilience in industries where cold exposure is a persistent threat. Establishing clear, targeted guidelines will be a crucial step toward mitigating cold-related occupational hazards and fostering a healthier global workforce.

European code against cancer, 5th edition - Occupational exposures and cancer

Occupational exposure to cancer-causing agents is a major, yet preventable, contributor to cancer in Europe and globally. In the European Union (EU), cancer is responsible for nearly half of all work-related deaths, underscoring the critical need for prevention measures. Effective strategies typically involve regulatory and workplace measures aimed at reducing or eliminating exposure risks. Raising awareness of hazardous workplace exposures is essential to empower individuals, foster a culture of prevention, and support effective regulation. The 5th edition of the European Code Against Cancer (ECAC5) includes a recommendation on how individuals can minimize their cancer risk and highlights the shared responsibilities of workers and employers for occupational safety and health: 'Inform yourself about cancer-causing factors at work and call on your employer to protect you against them. Always follow health and safety instructions at your workplace'. Key to ECAC5 is the addition of policy pointers at the governance level to support employers in taking preventive action and improving worker awareness.

Strengthening regulatory frameworks and increasing awareness are crucial steps toward reducing the burden of occupational cancer.

Musculoskeletal Health

Differences in chronic musculoskeletal pain among male and female Brazilian university professors

Objective: To compare sociodemographic, clinical, pain, work, and self-efficacy aspects between male and female Brazilian federal university professors with chronic musculoskeletal pain. **Methods**: This cross-sectional study included 974 university professors with chronic musculoskeletal pain. Data collected: an e-survey between January and May 2023. Variables: sociodemographic and clinical characteristics, pain intensity, self-efficacy in chronic pain, and work productivity loss. Statistical analyses used t-tests, Mann-Whitney tests, and regression models. **Results**: Women reported 27% more body areas with pain and 10% higher pain intensity than men. Continuous pain medication use was 53% more frequent among women, who also engaged in 49% more rehabilitation treatments. Women scored lower in pain management self-efficacy and experienced greater productivity loss. The most common pain locations for women were the suprascapular region, while men reported lower back pain. Women used more analgesics and anticonvulsants, and men had higher rates of overweight and obesity. **Conclusions**: Women experience more severe and widespread chronic musculoskeletal pain, use more medications and rehabilitation, and have lower self-efficacy and higher productivity loss compared to men.

A multi-component intervention (NEXpro) reduces neck pain: A randomized controlled trial among Swiss office workers

Objective: This study aimed to investigate the effect of a 12-week multi-component intervention on neck pain among Swiss office workers. **Methods**: Between January 2020 and April 2021, we conducted a stepped-wedge cluster randomized controlled trial involving 120 office workers (18-65 years) without severe neck problems from two Swiss companies. Participants started in the control condition and sequentially transitioned to the intervention condition by their cluster. The 12-week intervention included neck exercises, health-promotion workshops, and workplace ergonomics. Neck pain was assessed by intensity [numeric rating scale (NRS) 0=no pain, 10=maximum pain], frequency (days with neck pain in the past 28 days), and disability [Neck Disability Index (NDI) 0%=no disability, 100%=maximum disability]. Mixed-effects models were used to assess the intervention's effect on neck pain intensity, frequency, and disability. **Results**: This analysis includes 517 observations (295 control, 222 intervention). At baseline, the mean age was 43.7 years [standard deviation years (SD) 9.8], and 71.7% were female. The average neck pain intensity was NRS 2.4 (SD 2.0), frequency 6.8 days (SD 8.0), and disability 11.8% (SD 9.9). A statistically significant effect favoring the multi-component intervention was found for neck pain frequency, with a marginal predicted mean reduction of 1.55 days [95% confidence interval (CI) -2.84--0.26], and neck disability, with a marginal predicted mean reduction of NDI 2.23% (95% CI -2.96--1.68). **Conclusions**: This study provides evidence of the effectiveness of a 12-week multi-component intervention in reducing neck

pain among office workers. Specifically, office workers experienced neck pain less frequently and with a milder impact on daily activities. Further research is needed to investigate long-term effects.

Guiding and Supporting Mental Health and Wellbeing

Mental Health

Mental stress as a trigger of cardiovascular events: A narrative review

Background: Several mental disorders has been associated with cardiovascular disease (CVD), although stress may have the strongest correlation. In this narrative review, we examine how stress is linked to CVD. **Results**: Stress can be secondary to multiple factors and it can be imposed on an individual in more or less manifest ways. Psychosocial stress can result from adverse social circumstances such as poverty, racial, gender, religious disparities or discrimination, violence and environmental pollution. Large segments of the population are forced to endure poor working conditions, low food quality, physical and verbal abuse not only in the developing world but also in more flourishing societies as well. Wars that have ignited widely of late are inherently stressful events with potential enduring effects after the conflicts. Isolation and loneliness are growing issues in modern societies and impose a heavy burden of stress. Epidemiological studies have shown that stress is linked to CVD through an increased incidence of traditional risk factors (smoking, hypertension, insulin resistance and obesity). Experimental and laboratory evidence has shown a link between stress and CVD via neuro-endocrine, inflammatory and immune pathways. Patients with prior CV events affected by stress are at higher risk of recurrent events compared to similar patients without stressful conditions. **Conclusions**: The close association between stress and CVD suggests that interventions to limit the effect of stress may result in a reduced incidence of de novo and recurrent CV events. Physicians should be aware of the importance of screening for stress in patients with CVD. Future efforts should be directed to the development of easily implementable screening tools and targeted interventions within healthcare frameworks.

Burnout, belonging, and mental well-being: Predictors of turnover intent among local public health professionals

We analyzed a nationally representative sample of local public health professionals (LPHPs) from varying jurisdiction sizes across the United States who responded to the 2024 Public Health Workforce Interests and Needs Survey (PH WINS). Our goal was to explore experiences of burnout; perceived belonging within an agency; self-rated mental and emotional well-being; and intentions to leave an organization. Results showed that burnout was negatively associated with and perceived belonging within an agency was positively associated with ratings of mental and emotional health. Each of these 3 variables were associated with an intent to leave an organization in the next year. We discuss implications to-and recommendations for mitigating-attrition of the nation's local public health workforce after the size of the LPHP workforce rebounded following over a decade of decline.

Ten-year working life sequences in women and men following sickness absence due to common mental disorders: A Swedish prospective cohort study

Background: Rates of long-term sickness absence (SA) spells due to common mental disorders (CMD; depression, anxiety, and stress-related disorders) are increasing in Western countries, especially among women. However, little is known about their future SA and work situation. We aimed to identify future working-life sequences among women and men with long-term SA due to CMD. **Methods**: Ten-year sequences of annual working-life states were identified prospectively in individuals in Sweden aged 30-50 years with a new SA spell >90 days with CMD in 2010. Representative typologies were identified with clustering and associations with sex and several covariates were investigated by multinomial regression, yielding odds ratios (OR) with 95% confidence intervals (CI). **Results**: The most frequent typology, return to work (RTW), was observed in 49.5% of women and 40.6% of men. Prior SA, a full-time index SA, and low income were inversely associated with the RTW typology in both sexes. Adjusted for covariates and relative to RTW, men had higher odds of a typology described by emigration, severe mental disorders, or death (OR 1.3, CI 1.1-1.4), while women had higher odds of a typology described by recurrent SA (OR 1.3, CI 1.1-1.4). Low income, low educational level, mental comorbidities, and prior SA were negatively associated with RTW in both women and men. **Conclusions**: Roughly half of patients on long-term SA due to CMD showed sustainable RTW. Women more likely experienced RTW but also recurrent SA, while men had higher odds of severe mental disorders or death during a ten-year follow-up period.

Examining the association between internet use and perceived stress in adults: Longitudinal observational study combining web tracking data with questionnaires

Background: In today's digital era, the internet plays a pervasive role in daily life, influencing everyday activities such as communication, work, and leisure. This online engagement intertwines with offline experiences, shaping individuals' overall well-being. Despite its significance, existing research often falls short in capturing the relationship between internet use and well-being, relying primarily on isolated studies and self-reported data. One major contributor to deteriorated well-being is stress. While some research has examined the relationship between internet use and stress, both positive and negative associations have been reported. **Objective**: This study aimed to identify the associations between an individual's internet use and their stress. **Methods**: We conducted a 7-month longitudinal study. We combined fine-grained URL-level web browsing traces of 1490 German internet users with their sociodemographics and monthly measures of stress. Further, we developed a conceptual framework that allows us to simultaneously explore different contextual dimensions, including how, where, when, and by whom the internet is used. We applied linear mixed-effects models to examine these associations. **Results**: Our analysis revealed several associations between internet use and stress, varying by context. Increased

time spent on social media, online shopping, and gaming platforms was associated with higher stress. For example, the time spent by individuals on shopping-related internet use (aggregated over the 30 days before their stress was measured via questionnaires) was positively associated with stress on both mobile (β=.04, 95% CI 0.00-0.08; P=.04) and desktop devices (β=.03, 95% CI -0.00 to 0.06; P=.09). In contrast, time spent on productivity or news websites was associated with lower stress. Specifically, in the last 30 days of mobile usage, productivity-related use showed a negative association with stress (β=-.03, 95% CI -0.06 to -0.00; P=.04). In addition, in the last 2 days of data, news usage was negatively associated with stress on both mobile (β=-.54, 95% CI -1.08 to 0.00; P=.048) and desktop devices (β=-.50, 95% CI-0.90 to -0.11; P=.01). Further analysis showed that total time spent online (β=.01, 95% CI 0.00-0.02; P<.001), social-media usage (β=.02, 95% CI 0.00-0.03; P=.02), and gaming usage (β=.01, 95% CI 0.00-0.02; P=.02) were all positively associated with stress in high-stress Perceived Stress Scale (PSS>26) individuals on mobile devices. **Conclusions**: The findings indicate that internet use is associated with stress, and these associations differ across various usage contexts. In the future, the behavioral markers we identified can pave the way for designing individualized tools for people to self-monitor and self-moderate their online behaviors to enhance their well-being, reducing the burden on already overburdened mental health services.
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Journal of Medical Internet Research, vol. 28.
User License: *Creative Commons Attribution (CC BY 4.0) (https://creativecommons.org/licenses/by/4.0/)*
Keywords: Internet use; longitudinal design; online behavior; sociodemographic differences; stress; web browsing traces.
Evidence Level: 4B
Link: https://www.jmir.org/2026/1/e78775

Bullying, Harassment and Occupational Violence

Onset of exposure to workplace bullying and incident treatment with psychotropic medication - An emulated target trial with 25 309 Swedish and Danish employees

Aims: Exposure to workplace bullying is associated with an increased risk of mental health conditions, yet it is debated whether the association is causal. This study aims to address this by examining whether onset of workplace bullying is associated with initiating treatment with psychotropic medication, here used as a proxy measure for onset of common mental disorders. **Methods**: We used two longitudinal datasets from Sweden and Denmark (mean age: 47.4, women: 52.8%), combined with national registry data on psychotropic medication purchases. Using a target trial approach, the study population (N = 25 309) consisted of employees free of workplace bullying and psychotropic medication use at baseline. We used Cox proportional hazards regression (adjusted for sociodemographic variables, depressive symptoms and psychosocial work characteristics) to assess the association between onset of exposure to workplace bullying and incident treatment with psychotropic medication during 2 years. **Results**: In total, 1490 individuals (5.9%) experienced onset of workplace bullying. Bullying onset was associated with incident treatment with any psychotropic medication (HR: 1.42, 95% CI 1.15-1.77, model adjusted for sociodemographic variables). This association was attenuated in the fully adjusted model (HR: 1.24, 95% CI 0.99-1.53). In analyses focusing on antidepressant treatment, the estimates were stronger (HR: 1.55, 95% CI: 1.15-2.09, fully adjusted model). The results further demonstrated an exposure-response relationship, such that higher frequency of bullying exposure was associated with an increased risk of initiating any psychotropic treatment and antidepressants. **Conclusions**: Individuals experiencing onset of workplace bullying were at higher risk of starting antidepressant treatment within 2 years. This is the first study showing that onset of workplace bullying can contribute to the development of mental health conditions requiring medical treatment. These results underline the importance of preventive interventions that reduce workplace bullying.
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Workplace demands, resources, and well-being among police staff working in forensic services

Forensic staff play a crucial role in law enforcement through providing specialist services to police agencies in criminal investigations. Given the unique work, including frequent exposure to potentially distressing material, administrative workloads, and other work-related pressures, forensic staff are at risk of increased occupational stress. The current study examined the demands and resources associated with stress-related outcomes among forensic staff. It further provides descriptions of the coping strategies used, perceptions of organizational support resources, and attitudes toward help-seeking and using sick leave. Participants were 114 sworn and non-sworn forensic staff working in an Australian law enforcement organization. The study used a mixed methods design with participants completing survey questions online. Quantitative data were analyzed using bivariate correlations and partial least squares regression analyses. Qualitative data were analyzed using thematic analysis. Results identified the key role of occupational and organizational stressors, and forensic-specific job-related demands, in predicting various stress-related outcomes. Supervisor support, peer support, and psychosocial safety climate also had a key role in predicting stress-related outcomes among forensic staff. Law enforcement organizations employing staff in forensic job roles should take a holistic approach to optimizing demands which not only focuses on trauma, but also on mitigating occupational and organizational stressors. Demands specific to the role of forensics also need to be considered. In an effort to offset job demands, police agencies should seek to uplift the capacity of key resources such as supervisors and peers and should focus on ensuring a positive psychosocial safety climate.

From source identification to preferential interventions: Determinants of a workplace mental health promotion program to control workplace stress among health care workers based on a qualitative study

Occupational stress among healthcare workers (HCWs) is increasing due to the development of healthcare services and increased occupational sensitivity. The aim of this study was to identify the determinants of a workplace mental health promotion program for stress management among HCWs. Data for this qualitative study were obtained through semi-structured interviews and focus groups. Data analysis was conducted using a directed content analysis approach, grounded in the PRECEDE-PROCEED model (PPM) and the Job Demands-Resources (JD-R) model. It was found that workplace stress has both individual and environmental (mainly organizational) origins. In the second phase of the program, ten subcategories were identified as effective factors in reducing employee stress in three categories: predisposing, enabling, and reinforcing factors. In the final step, in order to create changes and implement interventions, it was revealed that there is a need to formulate or revise managerial and structural policies in the organization and empower employees to improve interpersonal skills and manage workplace stress. Also, Non-occupational factors, Cognitive factors, Supervisory function, Personality characteristics, and Personal context of the employee were identified as new subcategories in the PPM to investigate work stress. Workplace stress has different sources and dimensions. Therefore, it is necessary to consider a combined and multi-level approach, including individual, social, organizational, and educational factors, for the

mental health promotion program in the workplace. In this regard, the conceptual model proposed in this study can be a roadmap for researchers and employers to control the stress of HCWs and other employees.

Psychosocial Issues

Reduction of adult employees' anxiety disorder in the work environment: Implications for anthropological philosophers and a case of multivariate analysis

Background: According to the literature, people who suffer from financial anxiety exhibit denial, skewed financial actions, and cognitive disturbances related to debt. As a result, the purpose of this study was to determine the effect of cognitive behavioral financial treatment on loan anxiety among employees. **Methods**: A group-randomized trial design was adopted, with 106 public servants randomly allocated to the intervention group and a waitlist control group as participants. Two versions of the Financial Anxiety Scale (FAS-A and FAS-P) created by 2 authors were utilized to collect data. Intervention consisted of a 3-month cognitive behavioral financial treatment program presented in 5 sessions, with the goal of assisting participants in identifying and changing their dysfunctional beliefs regarding the loan and other money-related concerns in order to bring about adaptive emotional and behavioral change. **Results**: A 2-way analysis of covariance demonstrated a consistent decrease in the mean financial anxiety scores of employees on loan in the treatment group over time, as measured by FAS-A and FAS-P. **Conclusion**: Based on the findings, we recommend that an intervention program be developed to identify and diagnose distorted or maladaptive financial attitudes and behavior in people suffering from various debt-related mental health disorders.

Effectiveness of and mechanisms of change in a self-help web- and app-based resilience intervention on perceived stress in the general working population: Randomized Controlled Trial

Background: Promoting individual resilience-that is, maintaining or regaining mental health despite stressful circumstances-is regarded as an important endeavor to prevent mental illness. However, digital resilience interventions designed to enhance mental health have yielded mixed results. Such heterogeneous effects reflect a variety of unsolved conceptual challenges in interventional resilience research. These range from grounding interventions in resilience frameworks, using theory or targeting etiologically important resilience factors as intervention content, to a lack of knowledge about the mechanisms underlying effects, and using techniques specifically developed to foster psychosocial resources. The web- and app-based resilience intervention RESIST was designed to address these challenges, mainly by using both the Positive Appraisal Style Theory of Resilience as its theoretical foundation and interventional techniques from Strengths-Based Cognitive Behavioral Therapy. **Objective**: This study's primary aim was to evaluate the effectiveness of RESIST on perceived stress in a general working population as a means of universal prevention, relative to a waitlist control group. A secondary study aim was to explore the resilience factors of self-efficacy, optimism, self-compassion, and perceived social support, the intervention targets as potential mediators of its effect on stress and self-perceived

resilience. **Methods**: In total, 352 employees were randomly assigned to either a self-help version of RESIST or a waitlist control group. Data were collected via the web at baseline, postintervention, and at 3- and 6-month (intervention group [IG] only) follow-ups. The primary outcome was perceived stress, measured with the Perceived Stress Scale-10. Secondary outcomes included self-perceived resilience, the resilience factors targeted, and other mental and work-related health outcomes. **Results**: The IG reported significantly less stress than controls postintervention (Δ=-3.14; d=-0.54, 95% CI -0.75 to -0.34, and P<.001) and at 3-month follow-up (Δ=-2.79; d=-0.47, 95% CI -0.71 to -0.22, and P=.002). These improvements in the IG were maintained at 6-month follow-up. Favorable between-group differences also were detected for self-perceived resilience and the resilience factors. IG participants completed on average 2.2 (SD 2.3) web-based sessions and used the app's core feature a median of 14 times (IQR 4.00-33.75, range 1-220). The positive effects of the intervention on stress and resilience were primarily mediated by changes in optimism and self-compassion. No evidence was found that self-efficacy and social support also acted as mediators. **Conclusions**: In a sample of employees experiencing heightened work-burden levels, RESIST was effective in reducing perceived stress and increasing self-perceived resilience as well as the targeted resilience factors. Mediation analyses suggested that developing a positive future outlook and a self-compassionate attitude toward oneself may be key drivers to enhance resilience. Changing the quality of social relationships and strengthening the belief in one's abilities may require more time, the involvement of others, or personal support from an eCoach to ensure sufficient learning opportunities.

Occupational psychosocial risks as predictors of depression, anxiety, and stress among hospital employees

Workplace mental health is a growing concern in Malaysia's healthcare sector, yet comprehensive psychosocial risk assessments across all staff remain limited. This cross-sectional study examined the prevalence and predictors of depression, anxiety, and stress among employees in four government tertiary hospitals in Kota Kinabalu, namely Hospital Queen Elizabeth, Hospital Queen Elizabeth II, Hospital Wanita dan Kanak-Kanak Sabah, and Hospital Mesra Bukit Padang. From 21st March 2025-20th April 2025, 233 staff members were selected via stratified random sampling. Data were collected using validated self-administered online questionnaires, including the 21-item Depression, Anxiety and Stress Scale and the Likelihood of Environment & Occupational Exposure Scale towards Psychosocial Risk in the Workplace. Analyses involved descriptive statistics, bivariate comparisons, and multivariate logistic regression using SPSS version 29. Results revealed high prevalence rates of anxiety (43.8%), depression (37.8%), and stress (27.0%). Bivariate analysis revealed elevated odds of depression among Chinese ethnicity, diploma educated, high-income staff, HQE employees, medical and clinical roles, doctors, and shift workers. Anxiety was linked to medical departments and shift work, while stress was prevalent in younger staff with shorter tenure. High job demand, low control, and inadequate support increased depression, anxiety, and stress risk. Multivariate analysis identified high psychosocial risks related to job demand (OR 3.94), control (OR 3.72), and support (OR 2.87) as significant predictors of depression. High psychosocial risk in job demand (OR 3.01), control (OR 2.29), and support (OR 2.59) also predicted anxiety. Stress was closely linked to staff aged 20-39 years (OR 3.14), high psychosocial risk in job control (OR 4.45), and support (OR 2.68). Although the cross-sectional design and reliance on self-report limit causal interpretation, these findings highlight the value of regular psychosocial risk assessments and targeted interventions. Strengthening workplace support systems is crucial to improving mental well-being among Malaysia's hospital workforce.

Job strain, social support, and alcohol-related health problems: A register-based cohort study

Objective: This study aimed to examine the association between job strain (combination of job demands and job control) and alcohol-related health problems among men and women and the extent to which workplace social support moderates this association. **Methods**: This study used information from the register-based Swedish Work, Illness, and Labor-market Participation (SWIP) cohort, focusing on working individuals born 1945-1975, who were registered in Sweden in 2005 (N=2 822 462). Job demands, control and workplace social support were measured using job exposure matrices (JEM). Information on alcohol-related health problems (morbidity, mortality, medication prescription, sickness absence and disability pension) was obtained from multiple registers between 2006 and 2020. Cox regression models were employed to estimate associations between job strain and alcohol-related health problems, adjusting for sociodemographic background and previous health. The modifying effect of social support was assessed using relative excess risk due to interactions (RERI). **Results**: High-strain and passive jobs were related to an increased risk of alcohol-related health problems among both men [hazard ratios (HR) 1.28 and 1.32] and women (HR 1.06 and 1.05), after adjusting for important individual and parental covariates. Weak social support had diverging associations with the outcome for men and women. Strong social support appeared to buffer the risk in passive jobs but only among women (RERI=0.08). **Conclusions**: In Sweden, job strain seems to influence alcohol-related health problems, particularly among men. Women, however, appear to experience the protective effects of strong work-related social support measured at the occupational level.

Remote work opportunities and preferences among public health employees: Implications for job satisfaction, burnout, and retention

Objective: The purpose of this study is to describe individual and organizational characteristics among those who report working remotely and examine how concordance between public health employees' work preferences and their actual work situations relates to burnout, satisfaction, and intention to leave. **Design**: This cross-sectional study utilizes the 2024 Public Health Workforce Interests and Needs Survey (PH WINS). Bivariate relationships were analyzed by conducting chi-squared tests of individual and organizational characteristics by respondents' reported work situation, work preference, and concordance between work situation and work preference. Multivariate logistic regression models of workforce outcomes were performed holding race/ethnicity, gender, age, education level, public health degree attainment, role classification, tenure at current agency, current employer, current employment status, full-time employee, supervisory status, setting, and governance constant. **Setting**: A nationally representative sample of government public health employees. **Participants**: 55 742 government public health employees. **Main outcome measures:** Job satisfaction, burnout, and intention to leave. **Results**: Among respondents, most worked in-person, and 52.2% reported that their work situation matched their preference. Job satisfaction was high for the majority of respondents. Nearly 20% reported burnout, and 24.8% reported that they intended to leave their organization within a year. Work situation and preference varied significantly by age, education, tenure, employment status, and organizational setting. Older and less educated staff were more likely to work in their preferred setting (in-person). Multivariate models showed that concordance between work situation and preference was significantly associated with higher satisfaction and lower burnout and intent to leave. **Conclusions**: Findings show that employees whose work situations align with their work preferences report higher job satisfaction, lower burnout, and decreased intention to leave their organizations. These effects are most pronounced among younger and highly educated workers, who experience more difficulty in achieving this alignment.

The Spector Job Satisfaction Survey: Associations of satisfaction with leaving EMS

Objectives: Detailed job satisfaction evaluations are often used to build strategies for employee retention. Despite recognizing that emergency medical services (EMS) dissatisfaction drives turnover, validated tools rigorously evaluating satisfaction have not been employed. We aim to assess the association between EMS clinician satisfaction and their likelihood of leaving the profession using the validated Spector Job Satisfaction Survey (JSS). **Methods**: We conducted a cross-sectional survey of nationally certified EMS clinicians in the United States recertifying between October 2022 and April 2023. Our primary outcome was the self-reported likelihood of leaving EMS within 12 months (likely or not likely to leave). The primary exposure was job satisfaction, assessed using the 36-item JSS, scored from 36 to 216, and analyzed in two models: total satisfaction (dissatisfied [scores 36-108], ambivalent [108-144], satisfied [144-216]), and satisfaction subscales (e.g., pay, promotion, supervision). We applied Least Absolute Shrinkage and Selection Operator (LASSO) regression to identify key predictors of intent to leave EMS, adjusting for demographic and agency characteristics. Post-LASSO Bayesian logistic regression estimated odds ratios (OR) and 95% credible intervals (CrI). **Results**: Among 33,414 EMS clinicians (response rate: 26.3%), the median age was 36 years (IQR: 29,46), 74.2% were male, and 83.0% were White, non-Hispanic. Most respondents worked full-time (77.6%), primarily as EMTs (48.5%), in urban settings (89.9%). Mean satisfaction scores were higher among those not likely to leave EMS (146.7 [standard deviation: 29.0]) than those likely to leave (121.2 [28.4]). Odds of leaving decreased for more satisfied clinicians: ambivalent clinicians [0.35 (0.32-0.38)]; satisfied clinicians [0.11 (0.10-0.13)]; referent dissatisfied. Additionally, specific satisfaction subscales were associated with lower odds of leaving for those satisfied compared to those dissatisfied, including nature of work [0.32 (0.28-0.37)], pay [0.46 (0.40-0.52)], promotion opportunities [0.53 (0.47-0.61)], supervision [0.65 (0.57-0.73)] and contingent rewards [0.77 (0.67-0.88)]. **Conclusions**: The EMS clinicians with higher satisfaction with their nature of work, pay, and promotion opportunities were less likely to report intent to leave. These findings highlight key factors that may inform workforce retention efforts.

Demographic and occupational factors associated with work-life balance among physician assistants/associates: A cross-sectional study

Objective: To examine demographic and occupational attributes associated with work-life balance (WLB) satisfaction among physician assistants/associates (PAs) using a national dataset. **Design**: This is a cross-sectional study using 2023 national data. **Setting**: USA. **Participants**: The study included 149 909 board certified PAs who updated, confirmed or verified their profile questions. **Methods**: Descriptive and bivariate statistics, followed by multivariate logistic regression, were conducted to identify factors associated with WLB satisfaction among PAs. The primary outcome was a binary variable derived from a 7-point scale assessing PAs' satisfaction with WLB. Responses of 'Somewhat', 'Mostly' and 'Completely' satisfied were coded as 'Satisfied', while 'Neither/Nor', 'Somewhat', 'Mostly' and 'Completely' dissatisfied

were coded as 'Not satisfied'. Our analytical sample comprised 86,000 PAs who responded to a question inquiring about their satisfaction with WLB. **Results**: Over two-thirds (71.7%) of PAs indicated satisfaction with WLB. The multivariate logistic regression revealed that the types of specialties that PAs practised were among the strongest factors associated with WLB satisfaction. Compared with PAs in primary care, those practising in dermatology (adjusted OR (aOR)=1.83; 95% CI 1.66 to 2.02), general surgery (aOR=1.64; 95% CI 1.48 to 1.83), pain medicine (aOR=1.63; 95% CI 1.41 to 1.89) and hospital medicine (aOR=1.52; 95% CI 1.37 to 1.68) had higher odds of being satisfied with WLB (all p<0.001). Moreover, compared with females, male PAs indicated nearly 25% higher odds of being satisfied with WLB (p<0.001). Lower odds of WLB satisfaction were observed among PAs with any education debt, those seeing more than 40 patients weekly, those working over 40 hours a week, and PAs in their mid- and late-career stages. **Conclusions**: Our findings revealed that PAs practising in non-primary care specialties had the highest odds of reporting satisfaction with WLB. Identifying factors strongly associated with PA work-life balance can aid in developing targeted interventions. However, further research is needed to understand the intrinsic and extrinsic factors influencing PAs' WLB.

The effects of commuting and working from home arrangements on mental health

In this study, we quantify the effects of commuting time and working from home (WFH) arrangements on the mental health of Australian men and women. Leveraging rich panel-data models together with home-job-spell fixed effects, we first show that adverse effects of commuting time are modest in magnitude and manifest only among men with poor levels of mental health (0.01 SD decrease per 10-min increase of commuting time). Second, we show that WFH arrangements have large positive effects on women's mental health, provided that the WFH component is large enough. The effects are once again concentrated among individuals with poor levels of mental health (0.2 SD increase corresponding to working from home 50-75 % of the time). This uncovered contingency of effect sizes on the reported levels of mental health is novel and extends beyond Australia: we show that it also underlies the adverse effects of commuting time on the mental health of British women. Our findings highlight the importance of targeted interventions and support for individuals who are dealing with mental health problems.

Predictors of job satisfaction of frontline staff working in supported accommodation services for people with intellectual disabilities

Background: There are high rates of staff turnover in Australian disability services. Increasing job satisfaction could reduce staff turnover. This study examined predictors of job satisfaction of frontline staff working in supported accommodation services. **Method**: An exploratory factor analysis was conducted on the measure of job satisfaction to determine the dependent variables. Multilevel modelling was used to examine predictors of job satisfaction. **Results**: Three dimensions of job satisfaction were identified: Work Conditions, Tasks and Development, and Management. Role clarity, role conflict and collaboration within the organisation predicted all three dimensions. Staff having longer experience in the service predicted Work Conditions, while staff working more hours or being a frontline supervisor predicted satisfaction with Management. Staff working in services where the people supported had higher levels of engagement was

associated with Tasks and Development. **Conclusions**: Increasing role clarity and collaboration within the organisation, and reducing role conflict, could improve job satisfaction.

Occupational stress and substance use-related stigma among criminal attorneys

Problematic substance use is a national crisis in the United States. While criminalization of substance use places the criminal legal system (CLS) on the front lines of this crisis, little is known about how this impacts the CLS workforce. From October 2022 to March 2023, informed by the Health Stigma and Discrimination Framework, we conducted qualitative interviews with practicing criminal attorneys using a semi-structured interview guide focused on drivers, facilitators, and practices of substance use-related stigma. Stigma toward individuals with substance use disorders (SUD) has been shown to influence professional behavior, treatment access and outcomes. Inductive and deductive thematic analysis explored experiences of occupational stressors, personal substance use, and attitudes toward defendants in substance use-related cases. Interviews with 17 participants (7 women, 10 men; 88 % White; mean years of legal experience: 13.4, standard deviation: 7.8) revealed a demanding work environment characterized by severe pressures, high-volume caseloads, and the pervasive role of substance use in many cases. Occupational stressors diminished CLS attorneys' empathy towards defendants and minimized their attention to their own behavioral health. CLS work environments normalized substance use among attorneys (i.e., alcohol), fueling challenges faced by professionals and those encountered by defendants. Respondents lacked evidence-based SUD resources, resulting in ineffective case resolution and increased occupational stress. A sense of futility and emotional exhaustion was expressed about defendants with recurrent substance use-related cases. Overall, we found that failure to effectively address substance use-related harms drives occupational stress and stigma among CLS professionals. Further research is necessary to inform CLS-focused interventions.

Fostering Work Participation

Return to Work

Supportive elements and challenges to return to work following a concussion: A scoping review

Objective: This scoping review aims to comprehensively explore the facilitators and barriers influencing the return to work (RTW) process following a concussion, with a focus on the person impacted by concussion, medical system, funder, and workplace domains. **Design**: A scoping review of electronic databases, including CINAHL, Embase, MEDLINE, PsycINFO and Web of Science, was conducted to identify relevant studies published up to April 6, 2024. Studies were included if they examined factors influencing RTW following a concussion and were available in English. Data extraction, numerical analysis and deductive content analysis were performed to determine key themes from the data. Reporting guidelines provided by the PRISMA-ScR were adhered to, and the protocol has been registered and can be accessed at the Open Science Framework. **Results**: Twenty studies met the inclusion criteria and were included in the review.

Findings were organized into 4 main themes influencing the RTW process: the person impacted by concussion, medical system, funder, and workplace. These were further categorized into 2 subthemes: supportive elements and challenges. Various supportive elements within each theme were identified, such as individualized rehabilitation services, graduated return to work, and developing personal agency in the individual impacted by concussion. Challenges such as lack of patient education, delayed access to services, and isolating workplace accommodations were highlighted. These findings underscore the complex interplay of factors shaping the RTW trajectory post-concussion. **Conclusion**: This scoping review provides a detailed examination of supportive elements and challenges in the RTW process following a concussion. The identified themes offer valuable insights for clinicians and researchers seeking to optimize RTW outcomes and support individuals re-entering the workforce after a concussion. Future research should prioritize an examination of relevant policies and practices, assessing long-term outcomes, and explore strategies to integrate support systems to enhance the RTW experience.

Quality of life and return to work after radiotherapy in young adults with head-and-neck cancer: A bicentric cross-sectional observational study

Objective: Young adults (18-45 years) with head-and-neck cancer represent a unique population with limited data on quality of life (QoL) and return-to-work after radiotherapy. This bicentric study aimed to evaluate these outcomes. **Methods**: Conducted at two comprehensive cancer centers, the study included young head-and-neck cancer survivors treated with curative radiotherapy between 2003 and 2023. QoL was assessed with EORTC QLQ-C30 and HN43; distress, depression, and anxiety with the NCCN Distress Thermometer, PHQ-9, and GAD-7; fear of cancer progression and work ability with FoP-Q-SF and WAI. **Results**: Out of 83 eligible patients, 58 (70%) participated. The median age at radiotherapy was 41 years, with a balanced gender distribution (40% female, 60% male). The median time from radiotherapy to questionnaire completion was 82.5 months. Mean global QoL was 65.0, comparable to the age- and gender-matched reference population (67.2). Clinically relevant distress was reported by 52%, severe depressive symptoms by 12%, moderate-to-severe anxiety by 21%, and strong fear of cancer progression by 38%. At the time of the study, 66% had returned to work. Those who returned to work reported lower symptom scores, and less depression, anxiety, and distress. In the multiple regression analysis, gender was significantly associated with return to work, with females showing higher odds of returning. **Conclusions**: While overall QoL was comparable to the general population, young head-and-neck cancer survivors face psychological and work reintegration challenges. Returning to work is associated with improved QoL and reduced psychological symptoms, highlighting the need for tailored survivorship care.

Workers Compensation

Sociodemographic, industry and health factors associated with underutilization of Workers' Compensation Insurance

Objective: Workers' compensation insurance is an important financial resource for workers, and a key source of occupational injury and illness surveillance and research data. Underutilization of workers compensation is an ongoing concern. Using statewide data for a general working population, we estimated the portion of workers whose work-related injury or illness (WRII) was paid by workers' compensation and assessed workers' compensation utilization by industry, occupation, demographic and health characteristics, and over time. **Methods**: We combined 5 years of Behavioral Risk Factor Surveillance System telephone survey data (2017-2022, excluding 2020) from Washington State for workers (n = 31,171) and identified respondents with WRII (n = 1463). We estimated the percent of workers who utilized workers' compensation to pay for treatment of their WRII, and calculated adjusted prevalence ratios to estimate underutilization controlling for sociodemographic, work and health factors. Estimates were weighted to be representative of the Washington adult population. **Results**: Of the 5.1% of Washington workers who experienced a WRII within the past 12 months, just over half (51.3%, 95% CI: 48.1%, 54.5%) reported that their WRII was paid by workers' compensation insurance. Controlling for other sociodemographic, work and health factors, workers' compensation utilization was lower among workers who were younger, male, graduated from college, reported poorer mental health, and could not afford medical care. Workers' compensation utilization was lower among most service-related industries and occupations. Annual estimates of utilization statewide changed little over time. **Conclusion**: Underutilization of workers' compensation insurance is substantial. Workers' compensation data are more likely to miss younger workers, and workers in service-related industries and occupations.

The role of nontraditional benefits in recruitment and retention for public health workers age 35 and under

Context: Governmental public health workers age 35 or younger have been shown to experience lower retention rates than older workers. Salaries are often a factor in retention, but because health departments sometimes face restrictions in improving salaries, health departments might explore offering nontraditional benefits to attract and retain workers. **Objective**: We sought to analyze data from the 2024 Public Health Workforce Interests and Needs Survey (PH WINS) to determine whether nontraditional benefits are more highly valued by younger workers than older workers. **Design**: We selected respondents of 2024 PH WINS who were permanent, full-time health department employees, then created 2 subgroups of these respondents, one age 35 and younger, and the other over age 35, and compared their responses to survey questions regarding nontraditional benefits, reasons to stay in their jobs, and, for those 35 and younger, the factors which attracted them to governmental public health. **Results**: Younger PH WINS respondents were significantly more likely to value nontraditional benefits than older workers. The findings were generally consistent with the literature. **Conclusions**: Health departments could improve retention of younger workers by offering nontraditional benefits.

Working hours

Associations between shift work patterns and sleep disturbance: An analysis of cross-sectional data from UK Biobank

Objective: To investigate associations between shift work patterns and sleep disturbance, and to assess if the association is modified by demographic factors, socioeconomic factors, anthropometric and lifestyle factors, health conditions or sleep traits. **Design**: Analysis of cross-sectional data obtained from the UK Biobank baseline assessment. **Setting**: UK Biobank, a large-scale prospective cohort study which recruited half a million participants aged 40-69 years between 2006 and 2010 from across the UK. **Participants**: A total of 285 175 employed or self-employed participants at baseline (2006-2010), including 148 296 (52.0%) females and 136 879 (48.0%) males. The sample comprised 94.0% White, 0.7% Mixed race, 0.36% East Asian, 2.0% South Asian, 1.8% Black and 0.89% from other ethnic backgrounds. **Outcome measures:** Sleep disturbance was defined as the presence of both insomnia and excessive sleepiness symptoms. **Results**: A total of 42 181 (14.8%) participants had sleep disturbance defined based on insomnia and excessive sleepiness. 236 200 (82.8%) were non-shift workers, while 48 975 (17.2%) were shift workers, which included 24 062 (49.1%) working day shifts only, 17 940 (36.6%) working night shifts sometimes or usually, and 6973 (14.2%) working night shifts always. Compared with non-shift workers, all shift workers had higher multivariable-adjusted odds of sleep disturbance: (non-night shifts: OR in model 3 (OR) 1.21 (95% CI 1.16 to 1.27); sometimes/usually night shifts: OR 1.37 (95% CI 1.30 to 1.44) and always night shifts: OR 1.50 (95% CI 1.38 to 1.63)). The association between shift work pattern and sleep disturbance was modified by age ($p_{interaction}<0.0001$), ethnicity ($p_{interaction}=0.0005$) and smoking status ($p_{interaction}=0.04$).

Conclusions: Shift work is associated with a higher odds of sleep disturbance compared with non-shift work in all participants, with greatest odds observed among those always working night shifts. The association was stronger among individuals who were younger than 55 years old, from an ethnic minority background and never smokers. Future large-scale longitudinal studies are needed to further investigate these associations.

Li et al. 2026.

Organisational Issues

Bureaucracy, happiness, and satisfaction at work

Despite increasing material prosperity, industrialized nations face declining self-reported happiness and increasing workplace dissatisfaction. This study investigates bureaucratic burden as a driver of diminishing job satisfaction, analyzing 7.9 million Glassdoor reviews of more than 8,000 companies from 2008-2023 using natural language processing and instrumental variables methods. We identify reviews mentioning bureaucracy and quantify their association with 1-5 star employer ratings. Mentioning bureaucracy corresponds to around 0.7-point lower ratings (a 22% decline from the mean), comparable to the impacts of mentioning low pay (-0.8) or workplace conflict (-0.9). Two-stage least squares analysis, instrumenting with future bureaucratic mentions at the same company, implies a causal relationship. These findings support theories about the harm of "illegitimate tasks" at work and suggest revisiting conventional efficiency rationales for workplace bureaucratization. Organizational practices emphasizing employee autonomy and meaningful tasks could partly mitigate declines in satisfaction.

Tu et al. 2026.

Job Design

An umbrella review of systematic reviews and meta-analyses on occupational heat exposure, health risks, and productivity losses globally

Background: Workplace heat exposure, intensified by climate change, increasingly threatens workers' health, safety, and productivity, especially in the agriculture, construction, and manufacturing sectors. However, current evidence is fragmented due to varied study designs, and the absence of an integrated, multidisciplinary synthesis. **Objectives**: This umbrella review synthesizes findings from current systematic reviews and meta-analyses to appraise the health and productivity outcomes of workplace heat exposure, assess evidence quality, and identify critical research and policy gaps. **Methods**: Fourteen systematic reviews and meta-analyses (published up to 31st March 2025) were included following predefined (PECOS) criteria. Methodological fidelity was analyzed using the AMSTAR checklist, and the strength of evidence was evaluated using the GRADE approach. **Results**: The fidelity of the included reviews was rated from moderate to high, while the robustness of evidence spanned from low to moderate due to study heterogeneity and observational designs. Consistent evidence links workplace heat exposure to higher risks of heat-related illness, reduced eGFR (AOR = 3.50, 95% CI: 1.30-9.40) resulting renal impairment, cognitive decline, and injuries (1% increase in risk per 1℃ rises in temperature). Emerging findings suggests heat-induced sub-cellular and molecular damage (i.e., increased 8-OHdG, HSP70), reduced sperm quality, indicating cellular dysfunction. Women and relocated workers face greater physiological strain. Productivity losses affect 30-60% of exposed workers, with prior estimates suggesting annual global economic losses of approximately $2.1 trillion. **Conclusions**: Workplace heat hazards significantly threaten global workforce health and economic resilience. Urgent, coordinated interventions, robust policy measures, and high-quality longitudinal research are required to alleviate these risks.

Collective bargaining and social dialogue as instruments to protect workers from heatwaves and climate change in the European Union

This article presents a comparative analysis of how collective bargaining and social dialogue contribute to protecting European workers from the effects of high temperatures linked to climate change. The study focuses on five European countries-Spain, Italy, Greece, the Netherlands, and Hungary-which together provide a comprehensive and nuanced overview of the current situation across Europe. The methodology is primarily qualitative, based on 11 case studies (covering both sectors and companies), 60 interviews with key informants, and an in-depth analysis of the existing legal framework for heatwave prevention in both public health and occupational safety and health (OSH) contexts. The study also includes a detailed review of collective agreements and other social dialogue tools-such as heat action plans and OSH catalogues-to assess the extent to which high temperatures are addressed in collective bargaining in the selected countries. The empirical evidence reveals that high temperatures are still only marginally addressed in European collective bargaining, and significant challenges remain. Nevertheless, the fieldwork also identified several initiatives which, despite their limitations, represent steps forward in worker protection and could serve as examples of good practice.

Management and Leadership

Strategies to improve recruitment, retention, working conditions, and skills among the long-term care workforce: An umbrella review of existing evidence

Background: Population ageing has an impact on the need for long-term care (LTC) because functional limitations increase with age. Most older adults require support from family or formal LTC providers; thus, there is an urgent need for strategies to strengthen LTC workforce recruitment and retention. **Objective**: To conduct an umbrella review to assess the strategies used to improve recruitment, retention, working conditions, and skills development of the formal LTC workforce. **Methods**: Following the PRIOR guidelines and after protocol registration on PROSPERO, we conducted an umbrella review and searched four databases: MEDLINE, Embase, CINAHL, and Web of Science for intervention studies between 1946 and June 2024. Eligible studies were systematic reviews of interventions targeting formal LTC workers caring for adults aged 60 years and older. Two reviewers screened, extracted data, and appraised methodological quality. **Results**: Of 10,475 screened articles, 19 reviews met the inclusion criteria. Continuing professional development and peer-led training consistently improved staff knowledge and competencies, and sometimes job satisfaction and turnover. The evidence for well-being programs and policies was limited and heterogeneous; overall, most reviews were of low quality. **Conclusions**: Future research should improve the context and workforce roles, adopt standardized outcomes, and rigorously evaluate organizational and policy interventions.

Cascading effect of abusive leadership on employee and organizational outcome: A comprehensive meta analysis

Dark personality leaders are known for their detrimental effects in the workplace. Through comprehensive meta-analysis this paper analyzes the impact of abusive leadership on employee and organisational outcomes using 39 independent studies with a total of 32,909 participants. Using a Hunter-Schmidt methodology, we examined the associations between abusive leadership behaviours and outcome variables capturing employee well-being, organisational commitment, and job performance through a random-effects meta-analysis. The results indicate the expected abusive leadership is a negative predictor of employee-related outcomes, as well as job performance indicators and commitment towards the organisation. These findings have important implications for organisational policy, leadership training programs, and intervention tools to reduce the effects of abusive leadership in the workplace.

From CEPNs to Training Hubs: A decade of population-level workforce education and their strategic role in delivering the NHS 10-Year Plan

Background: Since 2013, CEPNs-and, from 2018, Training Hubs-have provided locally led, multi-professional mechanisms for workforce education in primary and community care, aiming to match training supply and skill mix to population health needs. **Aim**: To synthesise the development, evolution, and impact of CEPNs/THs and assess their strategic alignment with the NHS 10-Year Health Plan (July 2025).
Discussion: Evidence from local evaluations and national guidance indicates CEPNs/THs expanded placement capacity, supported interprofessional learning, integrated new roles into primary care, and improved links between education providers and employers-albeit against a backdrop of regional variability and short-termism in funding. The 10-Year Plan's 'three shifts' (community-first, digital enablement, prevention) map directly to Training Hub functions, but require stronger place-based embedding, stable investment, and outcomes-focused evaluation. **Conclusion**: With explicit policy backing, multi-year funding, and standardised impact measures, Training Hubs can function as the operational bridge between national strategy and local delivery for the decade ahead.

ADAPTHEAT heatwaves and occupational health and safety in Hungary: The role of social dialogue

Climate change is already not only a global problem, but also poses a growing risk to the health and safety of workers. For this reason, this study analyses the measures taken as part of the ADAPTHEAT (Led by Fundación 1º de Mayo (Spain), with participation from Fondazione Di Vittorio (Italy), ELINYAE (Greece), Vrije Universiteit Amsterdam (Netherlands), and the Hungarian Trade Union Confederation MASZSZ (Hungary)) project in Hungary to mitigate heat-related risks in the workplace. The research focuses on legislation and employers' practices, which were analysed on the basis of risk assessments, collective agreements and case studies. The findings highlight that workplace heat stress is not only a concern in traditionally high-risk sectors such as agriculture but affects nearly all workplaces. Despite recent legislative changes in Hungary, the regulatory framework and employer obligations remain rather general. Therefore, raising awareness among employers and employees remains essential. The study also emphasizes the important role of trade unions and health and safety representatives in advocating for improved protection.

Changes in exposure to positive leadership behaviours and subsequent changes in workers' depressive symptoms and risk of onset of antidepressant treatment

Objectives: Using consecutive waves of a Danish nationwide survey, we investigated in a quasi-experimental design whether changes in positive leadership behaviours were associated with subsequent changes in depressive symptoms and risk of antidepressant treatment. **Methods**: Sample 1 consisted of 6062 workers participating in 2012, 2014 and 2016. Sample 2 consisted of 15 619 workers participating in either 2012-2014 or 2016-2018. We measured leadership behaviours by an eight-item scale and depressive symptoms by the Major Depression Inventory (MDI) and linked register data on purchase of antidepressants. Using linear and logistic regression, we adjusted for covariates and estimated the

association between changing levels of leadership behaviours and subsequent depressive symptoms and onset of antidepressant treatment. **Results**: In sample 1, changing from high to low levels of exposure to positive leadership behaviours from 2012 to 2014 was associated with a higher MDI score in 2016 (sample 1, regression coefficient: 1.12, 95% CI 0.68 to 1.56), whereas changing from low to high levels was associated with a lower MDI score (-1.84, 95% CI -2.51 to -1.17). In sample 2, ORs for antidepressant treatment ranged from 1.06 to 1.21 with wide CIs that included unity. **Conclusions**: This study suggests that a decrease in positive leadership behaviours has a hazardous effect on workers' level of depressive symptoms, whereas an increase has a beneficial effect. There were no clear associations with antidepressant treatment.

Supervisor bottom line mentality and its impact on employee outcomes: The mediating role of employee appraisals

The concept of Bottom-line mentality (BLM) has been increasingly emphasized in contemporary workplaces, often at the expense of other critical organizational priorities. However, its implications for employees have remained underexplored. This study, which investigates how supervisors' BLM influences employees' behaviors and perceptions in the workplace, underscores the need for a balanced approach to leadership. Using SmartPLS 4, survey data from 382 employees in Pakistan's fast-moving consumer goods sector were analyzed. The results reveal that supervisor BLM is positively associated with employee incivility and negatively associated with employees' goal progress. Furthermore, employees' hindrance appraisals mediate the relationship between supervisor BLM and incivility, whereas challenge appraisals mediate the relationship between supervisor BLM and goal progress. This research extends the literature by clarifying how supervisors' bottom-line focus shapes employee actions and work outcomes, and it highlights the importance of a balanced leadership approach. The findings suggest that although leaders may adopt a bottom-line mentality to enhance performance, its effectiveness depends on how employees interpret and respond. The study offers practical guidance for organizations seeking to strengthen feedback systems and reduce the negative effects of supervisory misconduct.

Quality employee-manager relationships are key to career success

This study investigated the relationship between the perceived quality of employee-manager relationships and workplace outcomes, and whether these differed between autistic and non-autistic employees. We surveyed 189 employed participants (n = 92 autistic, n = 97 non-autistic) from the United Kingdom. Participants completed measures of employee-manager relationship quality; workplace behaviours, for example, strengths use and job crafting; and outcomes, for example, career development opportunities and job satisfaction. Multiple regression analyses assessed the association between employee-manager relationship and autism diagnosis on behaviours and outcomes. One's relationship with their manager was a significant predictor of all workplace behaviours and outcomes, explaining 22% of the variance in career development opportunities and 7%-11% for other dependent variables. Autism diagnosis was not an independent predictor of the quality of the employee-manager relationship and outcomes. Autistic participants rated the relationship with their managers as poorer than non-autistic employees. This study emphasises the importance of positive employee-manager relationships for career success, irrespective of

neurotype. However, the poorer ratings of these relationships by autistic employees highlight a critical need for strategies to enhance employee-manager relationships.Lay Abstract Quality Employee-Manager Relationships are Key to Career SuccessWhy is this an important issue?Finding and keeping meaningful work is challenging for many autistic adults. A key factor in career success is the relationship between employees and their managers. Research shows that a strong relationship with one's manager can help employees use their strengths, feel more satisfied in their jobs and grow in their careers. However, little is known about how this applies to autistic employees, who may face unique challenges in the workplace. Understanding how these relationships affect autistic employees is important for creating supportive, inclusive and successful work environments.What was the purpose of this study?The study aimed to explore whether the quality of the relationship between employees and their managers affects autistic employees' workplace success. The researchers wanted to know if this relationship impacts things like job satisfaction, career development opportunities and the ability to use their strengths at work. They also compared autistic employees to non-autistic employees to see if there were any differences in these areas.What did the researchers do?The researchers surveyed 189 employees from the United Kingdom, including 92 autistic and 97 non-autistic participants. They asked participants about their relationship with their manager, how often they used their strengths at work, their job satisfaction and their career development opportunities. The researchers analysed this data to see how much the quality of the manager-employee relationship influenced workplace outcomes.What were the results and conclusions of the study?The study found that the quality of the relationship with one's manager was a strong predictor of workplace success for both autistic and non-autistic employees. This relationship was more important than whether an employee was autistic. However, autistic participants rated their relationships with their managers as poorer than non-autistic participants.

The mediating role of internal motivation on the relationship between ethical leadership and employee performance in hospitals in Northern Jordan

Objective: The study's main aim is to investigate the influence of ethical leadership (EL) on employee performance (EP) through internal motivation (IM) from the perspectives of clinical and administrative employees working in hospitals in northern Jordan. **Method design**: The study used a descriptive, correlational cross-sectional quantitative design. **Participants and setting**: Data were collected from 330 clinical and administrative employees between February and March 2024 using convenience sampling from five hospitals-2 public, 2 private, and 1 teaching hospital-in different geographical areas in northern Jordan. The study hypotheses were tested using a hierarchical multiple linear regression. **Results**: The study results revealed a statistically significant association between ethical leadership, internal motivation, and employee performance. Moreover, the results showed that internal motivation statistically mediates the relationship between ethical leadership and employee performance. **Conclusion**: The current study's findings can serve as an empirical basis for hospital decision-makers to plan and implement programs and/or establish or revise policies for the target population, improving employees' performance, achieving desired outcomes, and ultimately providing better care for patients.

The effects of employee dark triad traits and leadership styles on work-related outcomes in China: An agency-communion perspective

This study investigated the effects of employees' dark triad traits and leadership styles on employees' work outcomes among Chinese employees (N = 332). Four leadership scenarios were designed, based on a combination of leadership agency and communion, in order to capture goal-oriented and people-oriented leadership behaviors. Participants were randomly assigned to a leadership scenario and filled out a work-related questionnaire after reading it. We used hierarchical regression models to conduct the analyses. Next to significant direct effects of employees' dark triad traits and leadership styles on work outcomes, there were significant interaction effects between employees' Machiavellianism and leadership styles on their work outcomes. More specifically, compared to other leadership styles, high agency-low communion leadership was more likely to activate counterproductive work behavior (CWB) and emotional exhaustion among Machiavellians. No interaction effects occurred for narcissism and psychopathy.

Ensuring coherence in occupational biomonitoring: A call for alignment and collaboration

This commentary addresses a critical and timely issue, namely the continued exclusion of certified occupational hygienists from conducting exposure assessments using the biomonitoring approach, as reflected in the recent EU-OSHA 2025 guidance. Current EU regulations frame biomonitoring within medical surveillance. This regulatory structure limits the use of biomonitoring as a preventive tool and sidelines professionals who are essential to exposure assessment and workplace safety. We are a multidisciplinary team comprising certified occupational hygienists and occupational medical doctors. We believe that the EU OSHA guidance represents a missed opportunity for collaboration. We hope this commentary will reach members of the EU regulatory bodies encouraging them to reconsider the current framing and promote a more integrated approach. By clarifying roles and fostering cooperation between occupational hygienists and physicians, we can ensure that biomonitoring fulfills its full potential in protecting worker health.

Work Ability

Impact of occupation-based groups on occupational performance and satisfaction outcomes: Pilot study

Occupation-based groups can be used to improve occupational performance outcomes in the inpatient rehabilitation setting. It remains unclear whether they offer comparable outcomes to occupation-based interventions delivered individually. This study aims to pilot an occupation-based group intervention and compare occupational performance, satisfaction, and goal attainment outcomes with usual care. Twenty-one participants (15 women, 6 men, aged 34-85) were allocated to control (n = 11) and intervention (n = 10) groups. The control group received usual care (individual occupation-based interventions), while the intervention group received usual care plus an occupation-based group intervention. The method used a pilot quasi-experimental pre- to post-intervention design with a nonequivalent control group. The primary outcome measures were the Canadian Occupational Performance Measure (COPM) and the Goal

Attainment Scale (GAS). No significant between-group differences were found; both groups reported statistically significant improvements with medium to large effect sizes. Pilot data suggests that occupation-based groups offered comparable outcomes to individual treatment; a larger sample size is required to draw conclusions on their impact. Australian New Zealand Clinical Trials Registry (https://uat.anzctr.org.au/Default.aspx) was accessed on November 20, 2023. Registration number: ACTRN12623001196639.

Work from home and job satisfaction: Differences by disability status among healthcare workers

Background: Many workers with disabilities face negative stereotypical attitudes, pay gaps, and a lack of respect in the workplace, contributing to substantially lower job satisfaction compared to people without disabilities. Work from home may help to increase job satisfaction for people with disabilities. **Objective**: This study analyzes how different measures of job satisfaction vary between people with and without disabilities, and the extent to which working from home moderates the relationship between disability and job satisfaction. **Methods**: We use multivariable regression analysis to examine if the ability to work from home moderates the relationship between disability and indicators related to job satisfaction. The dataset draws on a novel survey of healthcare professionals. **Results**: Results show that people with disabilities have relatively greater turnover intentions, lower sense of organizational commitment and support, weaker perceptions of openness and inclusion in the workplace, and worse relations with management and coworkers. Regressions indicate that working from home helps to improve most perceptions of work experiences but does so more for people without disabilities than for people with disabilities. **Conclusions**: The findings suggest that (a) some accommodations typically viewed as exceptions to meet the needs of people with disabilities have even greater benefits for the workforce at large and (b) because workers without disabilities also benefit from remote work, we cannot expect this accommodation to close job satisfaction gaps caused by inequities.

Molecular classification in a cohort of occupational dermatological patients: Diagnostic results and course of ability to work and sick leave over two years

Hand eczema is the most common occupational skin disease (OSD), often leading to sick leave or job termination. Standard diagnostic procedures are often ambiguous. Molecular classification has been described to improve differentiation between eczema and psoriasis, which is the most common differential diagnosis. Since 2020, a cohort of 287 patients with suspected, occupational hand and/or foot dermatoses (eczema or psoriasis) has been established in Germany. The current analysis focuses on descriptive results on the days of absence from work, occupational retention and legal recognition of OSD after 24 months. A total of 38.9% of the patients did not receive a distinct clinical diagnosis, while molecular diagnostics provided results in 93.1% of these cases. Sick leave days significantly decreased over 2 years (p<0.005) from a mean of 28.7 to 8.2 days. Legal recognition of OSD tripled from 10.1% to 30.2%. Job terminations due to skin diseases reached 27.1%, primarily from job changes or unemployment. Molecular diagnostics enhance diagnostic precision and may support improved prevention and disease management, reducing sick leave.

The findings underscore the individual severity and social impact of skin diseases like eczema and psoriasis in high-risk employments.

Employment is associated with manual ability in adults with cerebral palsy: A population-based study

Background: Employment rates are lower in adults with cerebral palsy (CP). Even though reduced manual ability is associated with limitations in daily activities, it is unclear whether employment rates are associated with manual ability in adults with CP. **Objective:** To analyze regular employment and employment rates (hours/week) in adults with CP and estimate their associations with manual ability relative to age and sex. **Methods:** This was a cross-sectional study of adults with CP, aged 20-64 years, from the combined Swedish CP follow-up program and registry. Manual ability was classified as levels I-V using the Manual Ability Classification System (MACS). Logistic regression analysis was used. **Results:** The study included 2304 adults with CP (1271 men; median age 28 years, interquartile range 20-64 years). Fewer than one in five (19 %) were employed, and about half (52 %) of these worked full time. The probability of employment in adults with MACS level II was almost half that of those with level I (OR 0.44; 95 % CI 0.34-0.57) and decreased with each MACS level to OR 0.01 (95 % CI 0.00-0.03) for MACS V. Limited manual ability was associated with a lower probability of working full time: ORs of 0.46 (95 % CI 0.30-0.72) for MACS II and 0.29 (95 % CI 0.16-0.56) for MACS III-V. **Conclusion:** Limited manual ability in adults with CP impacts both their likelihood of employment and employment rate. Greater manual ability is associated with a higher probability of regular employment and working full time.

Opportunities and challenges in the care of patients with somatic complaints and patients with additional work-related anxiety: A Mixed Methods Study

Background: Work-related anxiety can result in prolonged work incapacity and reduce return-to-work probabilities. Despite the prevalence of work-related anxiety in somatic rehabilitation settings, there has been little research examining the experiences of affected patients from a public health perspective. This research project aims to address this gap by providing initial insights into the care provided to patients with somatic complaints and patients with additional work-related anxiety. **Methods**: A sequential mixed methods approach was employed, beginning with semi-structured interviews (2022, n = 18 orthopedic rehabilitation patients), followed by questionnaire distribution (2023, n = 53). Qualitative analysis distinguished between patients with higher (JA) and lower (nJA) Job Anxiety Scale scores (cut-off 2.5). **Results**: The findings highlight notable differences between JA and nJA patients. JA patients often report that they face unmet psychological needs, limited work-related treatment focus, financial barriers, and inadequate occupational support, relying more on self-initiative for reliable information. In contrast, nJA patients appear to benefit from stronger social networks, stable financial resources, and improved access to healthcare. Both groups report mixed experiences with workplace support. For professionals the findings underline that JA patients are specifically in need of work-related interventions, even patients themselves remind about this. **Conclusions**: The findings illustrate significant differences between JA and nJA patients in terms of their experiences, challenges, and support needs within healthcare, workplace, and

rehabilitation contexts. While qualitatively insightful, these findings are pilot and explorative and warrant further research.

Effect of early-onset dementia on job loss in Japan: A matched cohort database study using health insurance claims data

Objective: To assess the rate of job loss amongst primary insured participants diagnosed with early-onset dementia (EOD) and to investigate the association between patients' background factors and job loss. Additionally, we evaluated the job loss rates amongst primary insured participants whose spouses were diagnosed with EOD. **Methods**: We analysed health insurance claims data from the Japan Medical Data Centre, covering the period from 1 April 2013, to 30 November 2023. Participants were categorised into two groups: EOD Group 1, comprising primary insured individuals with EOD; EOD Group 2, comprising primary insured individuals' spouses with EOD. Each group was compared with its respective control group. The control group comprised participants without dementia matched in a ratio of 1:5 to cases in EOD group based on sex, age and major comorbidities. **Results**: The rate of job loss in EOD Group 1 was higher than that in Control Group 1 (hazard ratio [HR] = 1.59, 95% confidence interval [CI]:1.39-1.82, p < 0.05). In contrast, EOD Group 2 had a lower rate of job loss than Control Group 2 (HR = 0.75, 95% CI: 0.57-0.996, p = 0.046). In EOD Group 1, patient background factors influencing job loss within 2 years included sex (female) (adjusted HR = 2.18, 95% CI:1.60-2.96, p < 0.05), age (adjusted HR = 1.07, 95% CI: 1.04-1.10, p < 0.05) and hypertension (adjusted HR = 1.35, 95% CI: 1.02-1.77, p < 0.05). **Conclusion**: This study identified participant background factors that influence job loss amongst participants with EOD, suggesting that addressing comorbidities at EOD onset and promoting lifestyle modifications may be beneficial. Examining the time to job loss following EOD onset is crucial for predicting its economic impact and developing effective support strategies. Therefore, this study's findings may be valuable in reducing the rate of job loss by enforcing workplace health promotions for employees with EOD.

Adapting to the Future of Work

Aging Workforce

Lifetime occupational physical demand and risk of hip fracture in older adults: A retrospective cohort study

Hip fractures in the elderly, especially among the Chinese population, are among the most serious complications of osteoporosis. As age increases, the incidence of these fractures rises. In this study, we seek to identify a range of lifetime occupational physical-demand factors that may serve as potential indicators of hip-fracture risk in Chinese individuals aged 65 years and older. Our aim is to inform preventive strategies and occupational health policies by enhancing understanding of how long-term physical work demands contribute to fracture risk across the aging population. This study employed a retrospective cohort design and was conducted at the Affiliated Hospital of Yan'an University. We included patients who underwent surgical treatment for intertrochanteric fractures or femoral neck fractures

between January 2017 and December 2021. The study followed the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines to enhance transparency and methodological reporting. A total of 434 patients were included in this study, comprising 95 with light, 297 with moderate, and 42 with heavy occupational physical demand. Unadjusted multivariate logistic analysis revealed that moderate occupational physical demand was associated with a decreased risk of hip fracture (OR = 3.57, 95% CI: 2.01-6.33, P <.0001; compared to heavy occupational physical demand). Adjusted multivariate logistic model Ⅰ showed that moderate occupational physical demand (OR = 3.35, 95% CI: 1.75-6.44. P = .0003; compared to heavy occupational physical demand) remained associated with hip fracture. Fully adjusted multivariate logistic model Ⅱ also showed that moderate occupational physical demand (OR = 2.83, 95% CI: 1.51-5.97, P = .0032; compared to heavy occupational physical demand) remained associated with hip fracture. Compared to heavy physical demand, moderate occupational physical demand might be associated with a higher risk of hip fracture among older adults.

Technology

Occupational exposure to video display terminals: A systematic review of ocular and visual health effects and associated risk factors

Objectives: To synthesize ocular and visual effects caused by occupational exposure to video display terminals (VDTs). Additionally, we aimed to identify the occupational and nonoccupational risk and protective factors related to these effects, and to propose a conceptual mapping to manage affected workers. **Methods**: The review protocol was registered in PROSPERO and the systematic review was conducted following PRISMA guidelines. A search of MEDLINE, Scopus, and Web of Science was performed to identify studies published between January 2006 and December 2023. Only primary studies were included. Study quality was assessed using a critical appraisal tool based on STROBE statements for cross-sectional studies and the Scottish Intercollegiate Guideline Network checklist for randomized controlled trials and cohort and case-control studies. Low-quality studies were excluded. **Results**: Eighty-five articles were included, 50 of high quality. The main ocular and visual effects were computer vision syndrome, dry eye disease, and other isolated signs and symptoms. The main risk factors were the daily hours of VDT exposure, female gender, use of ophthalmic or contact lenses, increasing age, altered lighting conditions, and job seniority. Breaks, adequate workstation design, and ergonomic improvements were the main protective factors. Psychosocial factors and lifestyle behaviors also may influence ocular and visual health at work. **Conclusions**: Wide methodological variations were found, making it difficult to compare studies. Nevertheless, an evidence-informed conceptual mapping has been proposed that could be used as a starting point to guide preventive measures in VDT work settings. Further research with appropriate epidemiological designs is needed to establish causal relationships or determine temporal sequences between exposures and outcomes.

The influence of generative artificial intelligence usage on employees' innovative job performance

The rapid advancement of AI technology has accelerated the adoption of generative artificial intelligence (GenAI) tools in the workplace, eroding the boundaries between professional responsibilities and personal space, thus impacting employees' innovative performance. This study empirically examines the link between innovative job performance and GenAI tool usage, framed through the Uses and Gratifications Theory. Analyzing survey data from 366 employees nationwide revealed that: (1) both cognitive and social uses of GenAI tools significantly enhance innovative performance; (2) cognitive use primarily facilitates knowledge transfer behaviors, while social use bolsters resource acquisition. Enhanced knowledge transfer and resource acquisition, in turn, improve job satisfaction, which is pivotal in driving innovative performance. This study introduces a novel framework for utilizing GenAI tools to optimize and manage employee performance within organizational settings.

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Supporting mental well-being of healthcare workers using a mobile app: A mixed-methods feasibility study

Poor mental well-being is common among healthcare workers, affecting individual health, patient safety, and organisational performance. Mobile app-based self-care interventions are promising due to their accessibility, low cost, and ease of use. This study aimed to assess the feasibility of a self-monitoring mobile app called MYARKEO, to improve mental well-being among healthcare workers and healthcare trainees in the United Kingdom (UK). The study evaluated recruitment and retention rates, variability of key outcomes to inform a future randomised controlled trial (RCT), intervention engagement, barriers and facilitators to engagement, and potential refinements to the mobile app. A mixed-method feasibility RCT was conducted with two groups: an intervention group using MYARKEO to monitor mental well-being over 6 weeks, and a non-intervention control group. Data were collected at baseline and post-intervention and included the Warwick-Edinburgh Mental Well-being Scale (WEMWBS), the Depression Anxiety and Stress Scale (DASS-21), and the mHealth App Usability Questionnaire (MAUQ). Qualitative data were collected through semi-structured interviews (n = 13) and analysed using thematic analysis. Forty-nine participants (32 workers, 17 trainees; aged 18-60+) were included in the trial, with a 20.5% dropout rate. Daily app usage averaged 64.5%. Participants frequently monitored mood, sleep, food, and exercise. Interviews identified themes of "Usefulness," "Enablers of engagement," "Barriers to engagement," and "Suggested intervention improvements." This study demonstrates the feasibility of using a mobile app to monitor and promote mental well-being among healthcare workers and trainees. While app engagement was promising, challenges were identified, highlighting the need for refinements to the app's content, interface, and design for future trials.

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