



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 November and December 2024 only.

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Description of Evidence Levels Definitions Used in this Review

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

Level of Evidence	Description
Level 1	Evidence from a systematic/scoping review or meta-analysis of relevant studies.
Level 2	Evidence from a randomized controlled trial
Level 3	Evidence from a controlled intervention trial without randomization (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
B	Study conducted outside Australia and confounders likely to affect generalisability

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Enabling Healthy and Safe Workplaces

Health and Wellbeing

A review of the links between work and heart disease in the 21st Century

This review explores the multifaceted exposures in the workplace that contribute to cardiovascular diseases (CVD), including physical, ergonomics, chemical, biological, psychosocial, and emerging occupational hazards. These well-documented occupational hazards have long been linked to heart disease. Exposures arising from these hazards present significant concerns for worker health and safety. Moreover, heat stress is an emerging and increasingly pervasive threat, exacerbated by climate change, particularly in outdoor, high-exposure industries like agriculture and construction. While the epidemiological links between heat and CVD are well established, there is a critical gap in research on the physiological impacts of heat on workers' cardiovascular health. In particular, migrant workers are especially vulnerable to these occupational hazards, particularly in the absence of targeted, equitable interventions. As global temperatures rise, addressing these occupational exposures is important for protecting the cardiovascular health of the workforce and the expanding field of occupational cardiology.

Makar et al. 2025.

Methodist DeBakey Cardiovascular Journal, vol. 20, no. 5.

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(<https://creativecommons.org/licenses/by-nc/4.0/>)

Keywords: Climate change; heat workers; migrant workers; occupational cardiology; occupational health and safety.

Evidence Level: 6A

Link: <https://journal.houstonmethodist.org/articles/10.14797/mdcvj.1478>

Cancer incidence and mortality in the occupational cohort of a German toxic waste landfill: A retrospective cohort study

Background: Employees at the Ihlenberg toxic waste landfill in northern Germany were found to have an increased risk of cancer and cancer-related deaths in previous analyses covering the time period from 1983 to 2008. The present study aimed to quantify cancer risk and all-cause mortality in the employee cohort in 2009 to 2021. **Methods:** In this retrospective cohort study, cancers were identified by linkage with cancer registries, and employee deaths were obtained from population registries. Standardized incidence ratios (SIRs) for cancers and standardized mortality ratios (SMRs) were calculated to quantify cancer and mortality risk in the employee cohort. The effects of employment duration and different latency periods up to 30 years were additionally considered. **Results:** The cohort of 590 employees (432 men, 158 women) who worked at the landfill for at least 3 months between 1983 and 2018 was established from human resource management documentation and followed from January 1, 2009 until December 31, 2021. During this follow-up period, the SIR for all cancers combined was 0.69 (95% confidence interval (CI): 0.47, 0.98) and the SMR for all-cause mortality was 0.51 (95% CI: 0.35, 0.73). Longer employment at the landfill was not associated with increased cancer incidence or mortality. **Conclusions:** Employment at the landfill, expected to reflect occupational exposure to toxic waste, was not associated with increased cancer incidence or mortality in the employee cohort. Preventive measures to reduce exposure and to promote a healthy lifestyle should be maintained at the landfill.

Manz et al. 2025.Sugg

BMC Public Health, vol. 24, no. 1.

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Keywords: Cancer registry; latency; occupational cohort; standardized incidence ratio; standardized mortality ratio; toxic waste.

Evidence Level: 4B

Link: <https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-024-21134-z>

Workplace mortality risk and social determinants among migrant workers: A systematic review and meta-analysis

Background: Migrant workers, a population of 170 million, often work in dangerous or unhealthy working environments and are likely to suffer workplace injuries and labour abuses. However, the risk of mortality in migrant workers compared with local workers is unknown. We aim to synthesise global evidence on migrant worker mortality risk and identify social determinants to inform health and safety protections for migrant workers. **Methods:** We conducted a systematic review and meta-analysis of peer-reviewed literature to examine mortality outcomes among migrant workers and associated risk factors. We searched MEDLINE, Embase, PsycINFO, and Ovid Global Health for studies published between Jan 1, 2000, and Jan 17, 2023, reporting quantitative primary research in English. A broad definition of migrant worker was used, including any worker who is foreign-born (ie, international first-generation migrant workers), either in paid employment or self-employment. Internal migrants, second-generation migrants, and foreign health-care workers were excluded. The primary outcome was any reported mortality, including all-cause mortality, cause-specific mortality, suicide, homicide, and fatal occupational injury. We used meta-analysis to compare outcomes between migrant worker and local worker populations, and a random-effects model to calculate pooled estimates. We used narrative synthesis to develop a data-driven conceptual framework capturing the intersectional social determinants of mortality in migrant workers. The study protocol is registered on PROSPERO, CRD42023372893. **Findings:** Of 11 495 identified records, 44 were included in the systematic review, of which 11 studies were pooled in meta-analyses. Data were from 16 countries, most of which were high-income countries, and included 44 338 migrant worker deaths, including migrants from the agriculture, construction, mining, and service industries. Compared with local workers, migrant workers had a higher risk of fatal occupational injury (pooled relative risk 1.71, 95% CI 1.22-2.38; eight studies; $I^2=99.4\%$), and a lower risk of all-cause mortality (0.94, 0.88-0.99; three studies, $I^2=90.7\%$). Migrant workers were more likely to die from external causes of death (such as falls or assaults) than internal causes of death (such as respiratory or digestive diseases) compared with local workers, with migrant workers also more likely to die from work-related homicides, especially in the retail and sex industries, with some evidence of higher suicide rates among female migrant workers compared with female local workers. Influential social determinants for poor fatality outcomes include migration-related factors (such as lower language proficiency, undocumented status, and long duration of stay) and labour-related factors (such as precarious employment, labour migration policies, and economic deregulation policies).

Interpretation: Migrant workers have a higher risk of workplace fatal injury despite being generally healthier than local workers, which could be explained by structural determinants such as precarious employment and inadequate safety protection. This health inequity must be urgently addressed through future interventions that account for migration-related and labour-related social determinants of health at the structural level, such as extending labour protection laws to migrant workers, and improving occupational health and safety and workplace conditions for this vital and growing workforce.

Funding: UK Medical Research Council and National Institute for Health and Care Research.

Lau et al. 2025.

Lancet Public Health, vol. 9, no. 11.

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Keywords: Mortality risk; migrant.

Evidence Level: 1A

Link: [https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(24\)00226-3/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(24)00226-3/fulltext)

Work-related stress is associated with unfavourable cardiovascular health: The multi-ethnic study of atherosclerosis

Background: Work-related stress is a psychosocial risk factor linked to a higher risk of cardiovascular disease. However, the association between work-related stress and cardiovascular health (CVH) is not well established. We estimated the association between work-related stress and CVH in a multiethnic sample of adults free of cardiovascular disease at baseline. **Methods and results:** We performed a cross-sectional analysis of 3579 community-based men and women, aged 45 to 84 years, of the Multi-Ethnic Study of Atherosclerosis from data collected between 2000 and 2002. Work-related stress (yes/no) was assessed by a self-administered questionnaire. CVH was measured by the American Heart Association's Life's Simple 7

metrics (smoking, physical activity, body mass index, diet, total cholesterol, blood pressure, and blood glucose). Each metric contributed 0, 1, or 2 points if in the poor, intermediate, or ideal range, respectively. The aggregated CVH score was 0 to 14 points and categorized as inadequate (0-8 points), average (9-10 points), and optimal (11-14 points). Polytomous logistic regression was used to estimate the association between work-related stress and CVH, adjusting for sociodemographic factors. The mean \pm SD age was 57 \pm 8 years, and 48% were women. Work-related stress was reported by 20% of participants. In fully adjusted models, participants with work-related stress had lower odds of having average (adjusted odds ratio [OR], 0.75 [95% CI, 0.62-0.92]) and optimal (adjusted OR, 0.73 [95% CI, 0.58-0.92]) CVH scores compared with participants without work-related stress. **Conclusions:** Work-related stress was associated with unfavourable CVH. These findings underscore the importance of workplace psychological well-being and suggest the need for studies on interventions that may reduce work-related stress and promote CVH. **Ogunmoroti et al. 2025.**

Journal of the American Heart Association, vol. 13, no. 22.

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Keywords: Life's Essential 8; Life's simple 7; cardiovascular health; risk factors; work - related stress.

Evidence Level: 4B

Link: <https://pubmed.ncbi.nlm.nih.gov/39503282/>

VUCA in the present-day health workplace and the mental health and wellbeing of health care workers: A systematic scoping review

Background: The health workplace is fraught with fluctuations and uncertainties, creating a volatile, uncertain, complex, and ambiguous (VUCA) environment, particularly impacting frontline healthcare workers (HCWs) and leading to an epidemic of stress, burnout and health issues, exacerbated by the COVID-19 pandemic. **Objectives:** This paper aims to explore the multifaceted aspects of HCWs wellbeing, address challenges arising due to COVID-19 and VUCA and highlight innovative approaches within health systems to enhance the quality-of-life HCWs. **Methods:** A systematic review was conducted using PubMed and Scopus with search terms including 'VUCA,' 'health personnel,' 'frontline healthcare workers,' and 'psychological wellbeing.' Grey literature focusing on Australia and Nigeria was also included. Search was limited to titles on "COVID-19", articles published in English, and articles published from inception to 11th March 2024. **Findings:** Initial search terms generated hundreds of thousands of literatures but after limitations to titles on COVID-19, 32 articles were screened and 22 selected for critical review. Seven other grey articles were included with focus on Australia and Nigeria. The summary findings indicate the disruptiveness of VUCA, and associated need to improve healthcare workers' resilience and this calls for further research. **Conclusion:** This report highlights the further need to explore the volatile, uncertain, complex and/or ambiguous health workplace with a view to improve healthcare workers wellbeing. Intentional organizational support strategies along with personal coping strategies should be further explored towards improving HCWs resilience and wellbeing.

Okonkwo et al. 2025.

BMC Health Services Research, vol. 24, no. 1.

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Keywords: Ambiguity; burnout; complexity; pressure; resilience; stress; uncertainty; volatility; wellbeing.

Evidence Level: 1A

Link: <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-024-11806-2>

Recent vaccination against SARS-CoV-2 is associated with less severe disease in working-age adults

Background: Essential workers, including those working in healthcare and education, are at higher risk of exposure to communicable diseases, including SARS-CoV-2. Reducing the rates of infection is important for their personal health and for the ongoing safe operation of essential services. **Methods:** Data from participants in two prospective cohort studies who tested positive for SARS-CoV-2 in 2020 through 2023 were used to determine whether vaccination against SARS-CoV-2 is associated with the severity of

symptoms in working-age adults. **Results:** SARS-CoV-2-positive tests (N = 3757) were reported by 3093 participants (mean: 1.2 per person); 1229 (33%) illnesses did not interfere with regular activities, 1926 (51%) made participants too unwell for regular activities, and 602 (16%) required participant bed rest. Compared with vaccine receipt more than 12 months earlier, receipt within six months of an infection was associated with lower risk ratios for more severe illness (too unwell: 0.69 and bed rest: 0.67) compared with being able to conduct regular activities. More recent vaccination was also associated with lower odds reporting of systemic symptoms (fever, myalgia, arthralgia) and fewer solicited symptoms.

Conclusion: Staying current with COVID-19 vaccinations should continue to be recommended since receiving a recent immunization lessened the severity of illness. Also, as symptoms of COVID-19 are now largely similar to other respiratory viruses, practitioners need to use this evidence to inform diagnostic testing and return-to-work policies.

Fischer et al. 2025.

International Journal of Environmental Research and Public Health, vol. 21, no. 11.

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Keywords: COVID-19 vaccines; Canada; adult; illness; symptoms.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/21/11/1501>

Machine learning evaluation of a hypertension screening program in a university workforce over five years

The global prevalence of hypertension continues excessively elevated, especially among low- and middle-income nations. Workplaces provide tremendous opportunities as a unique, easily accessible and practical avenue for early diagnosis and treatment of hypertension among the workforce class. The evaluation of such a Workplace Screening Strategy can give insight into its possible effects. Innovative machine learning approaches like k-means clustering are underutilized for such assessments. We set out to use this technology to analyse the results of our university's yearly health checkup of the employees for hypertension. An anonymized dataset including the demographics and blood pressure monitoring information gathered from workers in various departments/units of a learning organization. The overall amount of samples or data values is 1, 723, and the supplied dataset includes six attributes, such as year group (2018, 2019, 2021, 2022), Department/Unit (academic and non-academic), and gender (male and female), with the intended output being the blood pressure status (low, normal, and high). The dataset was analysed using machine learning approaches. In this longitudinal study, it was discovered that the average age for the workforce is 42. Similarly, it was revealed that hypertension was common among employees over the age of 40, regardless of gender or occupational type (academic or non-academic). The data also found that there was a consistent drop in the prevalence of hypertension from 2018 to 2022. According to the study findings, the use of machine learning algorithms for periodic evaluations of workplace health status monitoring initiatives (particularly for hypertension) is feasible, realistic, and sustainable in diagnosing and controlling hypertension among those in the workforce.

Adeleke et al. 2025.

Scientific Reports, vol. 14, no. 1.

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Keywords: Artificial Intelligence; hypertension/diagnosis; hypertension/prevention and control; machine learning; medical records systems, workplace; occupational health; screening programs.

Evidence Level: 4B

Link: <https://www.nature.com/articles/s41598-024-74360-1>

Social media use by teachers during work and its effects on their performance: The role of teacher's wellbeing and social media addiction

Background: Although extant literature has investigated the impacts of social sites on employees' job performance in different sectors, scholars have given little attention to teachers' job performance (TJoP) in higher educational institutes. **Purpose:** We aimed to investigate the direct and mediating impact of social media use (SMU) on TJoP. Based on social cognitive theory, this study proposed a model that consists of six hypotheses. **Methodology:** To empirically test the model, we develop a survey link to collect data from

respondents working in universities in Jiangsu province, China. Partial least square structural equation modelling (PLS-SEM) using SmartPLS 4 has been used for analysing 454 respondents. **Results:** Research findings demonstrate the significant effects of SMU on TJoP, well-being, and social media addiction (SMAdd). In addition, teachers' well-being and SMAdd have a positive and negative significant effect, respectively, on TJoP. Moreover, this research evidenced a significant partial mediation of teachers' well-being and SMAdd. **Conclusion:** This study points out the key role of SMU in the direct and indirect influences of TJoP through well-being and SMAdd. Further, it brings into view the urgency of higher education to prudently consider the implications of SMU on performance and general well-being among its faculty.

Chen et al. 2025.

BMC Psychology, vol. 12, no. 1.

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Keywords: Teacher's wellbeing; higher education institutes; social media addiction; social media use; teacher's job performance.

Evidence Level: 4B

Link: <https://bmcpyschology.biomedcentral.com/articles/10.1186/s40359-024-02115-8>

Impact of body weight on the relationships between sleep quality in healthcare workers and their somatic health, sexual life, occupational burnout and stress

Objectives: Sleep disorders can significantly affect the performance and well-being of healthcare workers. This study explores the influence of body weight on the links between sleep quality and various self-reported health indicators - including somatic and mental health, sexual life, and work-related stress - among healthcare workers. **Material and methods:** A national cross-sectional survey was conducted in February - April 2022 using a predominantly online, self-administered questionnaire. The group analysed for this study included 1478 healthcare workers from 99 hospitals and specialized clinics across Poland.

Results: Sleep disturbances, assessed via the 4-item Jenkins Sleep Scale, were reported by 16% of the participants. Over half (54.7%) of the respondents were categorized as overweight or obese based on their body mass index (BMI). A higher BMI was found to be associated with being male, age >50 years, working as a paramedic, possessing over ten years of work experience, and reporting poorer health and sexual life ($p < 0.001$). Sleep quality showed significant correlations with assessments of sexual life, stress levels, and occupational burnout ($p < 0.001$). These correlations remained significant after adjusting for BMI. Notably, in both univariate and adjusted models, sexual life assessment was a robust predictor of sleep quality across all BMI groups. For non-obese individuals, the impact of sexual life on sleep quality persisted even after adjusting for health indicators. **Conclusions:** The findings suggest that body weight may modulate how sleep quality is influenced by sexual life assessments, work-related stress, and somatic and mental health in healthcare workers.

Białoduzki et al. 2025.

International Journal of Occupational Medicine and Environmental Health, vol. 37, no. 5.

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Keywords: Body weight; healthcare workers; occupational burnout; sexual life; sleep disorders; stress.

Evidence Level: 4B

Link: <https://ijomeh.eu/Impact-of-body-weight-on-the-relationships-between-sleep-quality-in-healthcare-workers,195232,0,2.html>

Work Health and Safety

Occupational risk factors for skin cancer: A comprehensive review

Public health and clinical medicine should identify and characterize modifiable risk factors for skin cancer in order to facilitate primary prevention. In existing literature, the impact of occupational exposure on skin cancer, including malignant melanoma and non-melanoma skin cancers, has been extensively studied. This review summarizes the available epidemiological evidence on the significance of occupational risk factors and occupations associated with a higher risk in skin cancer. The results of this review suggest that there is

sufficient epidemiological evidence to support the relationship between the increased risk of non-melanoma skin cancers and occupational exposure to solar radiation, ultraviolet radiation, ionizing radiation, arsenic and its compounds, and mineral oils. Occupational exposure to pesticides and polychlorinated biphenyls appears to provide sufficient epidemiological evidence for melanoma, and a higher risk of melanoma has been reported among workers in petroleum refining and firefighters. This comprehensive analysis will establish a foundation for subsequent investigations and developing targeted interventions of focused preventive measures against skin cancer among the working population.

Lee et al. 2025.

Journal of Korean Medical Science, vol. 39, no. 42.

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Keywords: Melanoma; occupational exposure; occupations; radiation; risk factors; skin neoplasms.

Evidence Level: 6A

Link: <https://jkms.org/DOIx.php?id=10.3346/jkms.2024.39.e316>

Digital eye strain and its impact on working adults in the UK and Ireland

Clinical relevance: Digital eye strain (DES) is a condition encompassing visual and ocular symptoms that may arise due to the prolonged use of digital devices. The 2023 Tear Film Ocular Surface Lifestyle report defined DES as "the development or exacerbation of recurrent ocular symptoms and / or signs related specifically to digital device screen viewing". Studies vary as to the prevalence of DES with some reporting values as low as 10 % and some reporting values over 90 %, however no study has examined the prevalence of DES in the UK or Ireland (UK&I). **Purpose:** To determine the prevalence of DES amongst adults who work with digital devices in UK&I, their symptoms and ameliorative approaches taken by those affected. **Methods:** A web-based survey of digital device users was conducted. Adults who used a device for at least 1 h per day for work purposes were eligible to participate. The questionnaire was designed to determine the prevalence of DES, daily device usage, musculoskeletal and ocular symptoms, how they manage their symptoms and eye care history. **Results:** Based on a Computer Vision Syndrome Questionnaire score ≥ 6 , the occurrence of DES was high at 62.6 %. The mean number of hours devices were used for was 9.7 h. Musculoskeletal symptoms were reported by 94.3 % of users and ocular symptoms by 89.5 % with symptoms most likely to occur with those working from home. 8.1 % of respondents considered their symptoms significant enough to affect their work. **Conclusion:** This study provides a valuable insight into DES in digital device users in UK&I and is the first of its kind to be completed. It shows, that while the level of DES is high in device users, at 62.6 %, the actual effect or consequences of it on many does not appear to be significant.

Moore et al. 2025.

Contact Lens and Anterior Eye, vol. 47, no. 6.

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Keywords: Computer vision syndrome; digital eye strain; Ireland; UK.

Evidence Level: 4B

Link: [https://linkinghub.elsevier.com/retrieve/pii/S1367-0484\(24\)00068-7](https://linkinghub.elsevier.com/retrieve/pii/S1367-0484(24)00068-7)

Exploring sleepiness and stress among London bus drivers: An on-road observational study

Bus driver sleepiness is commonplace but often goes unreported within the industry. Whilst past research has begun to shed a light on the prevalence, potential causes, and consequences of bus driver sleepiness, this is often done using self-report methods. This is the first study to investigate sleepiness amongst city bus drivers on-road using a live bus route with drivers' regular schedules. A total of 16 participants completed two drives of their regular bus route once during an early morning shift and once during a daytime shift whilst physiological and self-report measures of sleep and stress were taken. Prior to these drives, drivers recorded their sleep in a diary and wore an actigraph to obtain objective sleep measures. Results showed that most drivers did not obtain sufficient sleep prior to early morning shifts, and often did not obtain as much sleep as they would need in order to feel rested before work. Sleepiness and stress were observed in both shifts. During early morning shifts sleepiness was likely a result of working during circadian lows and not obtaining enough sleep prior to the shift. In contrast, sleepiness during the daytime

shift was likely a result of completing a highly demanding task in complex traffic which not only contributed to fatigue, but also led to increased levels of stress. As well as demonstrating the prevalence of sleepiness amongst bus drivers, these findings show that the causes of sleepiness can be multifaceted and often come about due to a combination of work and personal factors. In addition, the experience of sleepiness is not the same for all drivers, with individual differences in the experience of sleepiness playing a large role. These differences highlight the need for individualised interventions which should be considered by policymakers alongside the combination of causal factors within a larger systems approach.

Miller et al. 2025.

Accident Analysis & Prevention, vol. 207.

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Keywords: Bus driver; driver sleepiness; fatigue; on-road observation; sleepiness.

Evidence Level: 5A

Link: [https://linkinghub.elsevier.com/retrieve/pii/S0001-4575\(24\)00289-6](https://linkinghub.elsevier.com/retrieve/pii/S0001-4575(24)00289-6)

A field investigation of 3 masks proposed as respiratory protection for wildland firefighters: A randomized controlled trial in British Columbia, Canada

Introduction: Wildland firefighters are exposed through the lungs and skin to particulate matter, fumes, and vapors containing polycyclic aromatic hydrocarbons (PAH). Wearing respiratory protection should reduce pulmonary exposure, but there is uncertainty about the most effective and acceptable type of mask. **Methods:** Firefighters from 6-unit crews working with the British Columbia Wildfire Service were approached and those consenting were randomly allocated within each crew to a "no mask" control group or to use 1 of 3 types of masks: X, half-face respirator with P100/multi gas cartridge; Y, cloth with alpaca filter; Z mesh fabric with a carbon filter. Crews were followed for 3 consecutive firefighting days. The mask allocated was constant for each firefighter throughout. All participants completed a brief questionnaire at the start and end of each day, giving information on mask use, respiratory symptoms, and assessment of mask qualities. Spot urine samples were collected pre and post shift to assess 1-hydroxypyrene (1-HP) concentration as an indicator of total PAH absorption. Skin wipe samples from the hands and throat were collected pre and post shift and analysed for PAH concentration. On each day monitored, 4 participants carried sampling pumps to measure total particulates and PAHs on particles and in vapor phase. The primary outcome was the concentration of urinary 1-HP at the end of the fire day. Secondary outcomes were changes in respiratory and eye symptoms during the course of the shift, reported mask use, and perception of mask qualities. The analysis used a 3-level random intercept regression model that clustered observations within individuals and crews. We aimed to detect any relation of allocated mask type to the 4 outcomes, having allowed for estimated exposure. **Results:** Information was collected from 89 firefighters, including 14 women: 49% (37/75) of male firefighters were bearded. Nineteen fire days were monitored for a total of 263 firefighter × days, 64 to 68 for each intervention group. The end of shift 1-HP was higher than the start of the shift. Urinary 1-HP was more strongly related to PAHs on the skin than in the breathing zone. Men with beards had higher end-of-shift urinary log 1-HP/creat (ng/g) than other firefighters. None of the groups allocated a mask had lower 1-HP than the no-mask group, either in the study group overall or when stratified by beard-wearing. Among those without either beards or a failed fit-test, Mask Z reduced at the end of shift 1-HP where airborne PAH concentration was high. End-of-shift symptoms were related to particle mass in the breathing zone but was not mitigated by any of the masks. Hours electing not to wear a mask increased from the first to third shift for all mask types. Mask Z was rated as more comfortable than other types. Mask X was rated highest on fit and perceived protection. Mask Y gained the lowest ratings on fit, comfort and feelings of protection. **Conclusions:** Allocated masks did not provide protection overall, but the results highlighted the need for a wider understanding of the circumstances in which wearing efficient protection is well-advised.

Broznitsky et al. 2025.

Annals of Work Exposures and Health, vol. 68, no. 9.

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Keywords: PAH exposure; bearded workers; respiratory protection; respiratory symptoms; wildland firefighters.

Evidence Level: 2B

Link: <https://pmc.ncbi.nlm.nih.gov/articles/PMC11586274/>

Update on occupational cancer for better cancer prevention and control

Occupational cancer remains an ongoing and emerging issue in cancer prevention and control and is more easily preventable in practice than other causes. As of 2024, changes in various aspects, such as methods for estimating the burden of cancer, evidence on novel carcinogens and classification systems, modernization of working conditions, job characteristics, occupational exposure, and societal changes have played a significant role. Furthermore, advances in technology, including wearable devices, exposome, and biomedical technology, offer more precise methods for identifying the associations between occupational carcinogens and cancer. Diagnosing occupational cancer and investigating clusters are crucial for understanding its aetiology. Prevention at every level- from primary to quarterly prevention- and promotional activities are crucial for exposed workers, often outweighing the importance of treatment, which can be costly. This updated information, as reviewed in this article, and cooperative work with occupational medicine physicians, could contribute to improving clinical practices for better cancer prevention and control.

Ekpanyaskul 2025.

Asian Pacific Journal of Cancer Prevention vol. 25, no. 12.

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Keywords: Prevention and control; cancer; occupational carcinogen; occupational medicine.

Evidence Level: 6B

Link: <https://journal.waocp.org/?sid=Entrez:PubMed&id=pmid:39733440&key=2024.25.12.4465>

Factors facilitating and hindering the implementation of digital sleep coaching for bus drivers

Improving fatigue management is critical to the occupational safety of professional drivers. We aimed to identify the factors that facilitated or hindered the implementation of digital sleep coaching in bus companies and to explore bus drivers' experiences with it. Two bus companies implemented coaching for bus drivers. Using a mixed methods design, we collected data through two workshops (n = 30 and n = 27) attended by key personnel from the organisations and through questionnaires to the drivers (n = 30). Implementation was facilitated by, for example, the flexible participation and multichannel information of coaching, and hindered by restrictions on social support due to the COVID-19 pandemic, and lack of interest and inspiring examples. On average, the drivers rated the appropriateness and the feasibility of coaching as good. However, further development could lead to wider dissemination. It would also be important to involve the key people in the organisations and stakeholders more in supporting the implementation.

Järnefelt et al. 2025.

Applied Ergonomics, vol. 121.

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Keywords: Alertness; digital sleep coaching; implementation; shift work; sleep.

Evidence Level: 5B

Link: <https://www.sciencedirect.com/science/article/pii/S0003687024001339?via%3Dihub>

On the move: Understanding home care workers' experiences of using various modes of transportation at work in an occupational health perspective

Background: The demand for home care workers (HCWs) is increasing, but home care services face challenges in recruiting and retaining skilled workers, partly due to hazards in the work environment. Transportation to client visits is an important part of HCWs' working conditions, with various modes (e.g., walking, cycling, driving) being utilized. However, these modes are often implemented without considering HCWs' perceptions of their use. Therefore, our study aimed to understand HCWs' perceptions and

experiences of using different transportation modes at work, and how they may influence health.

Methods: Fourteen HCWs from a home care unit in Trondheim (Norway) participated in focus group interviews. The interviews were analysed using a reflexive thematic analysis approach including reflexive journaling. The analytical process was guided by a biopsychosocial understanding of health. **Results:** The analysis showed that when different transportation modes were assigned, predictability of the assignment was important for the HCWs. Both walking and driving were regarded to have both positive and negative health impacts. When walking, informants thought that getting fresh air outdoors and doing physical activity was health-promoting, while bad weather conditions and too much walking could be negative for their health. When driving a car, informants talked about privacy and getting physical rest as positive for their health, while traffic and parking conditions could be stressful. Individual factors such as age, physical health, and strong preferences were highlighted as important to consider when planning HCWs' transportation modes in an occupational health perspective. **Conclusions:** Walking now and then between client visits was generally believed by the HCWs to lead to positive health effects compared to only driving a car. Introducing planning of various transportation modes in advance, so that they are predictable, seems important to reduce stress among HCWs. In addition, some individual factors should be considered in the planning, and it should be realized that the planning likely represents a trade-off between promoting the psychosocial work environment when driving a car and potentially enhancing long-term physical health when using active transportation. Thus, biopsychosocial aspects of health should be considered when planning the mode of transport between client visits for HCWs.

Liaset et al. 2025.

BMC Health Services Research, vol. 24, no. 1.

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Keywords: Bicycle; electrical scooter; health care worker; home health worker; transport.

Evidence Level: 5B

Link: <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-024-12071-z>

“Why should care workers be any different from prison workers?” A qualitative study of second-hand smoke exposure during home-care visits and potential measures to eliminate exposure

Introduction: Despite world-leading measures in place to protect employees from second-hand smoke exposure in workplaces in the United Kingdom, workers who deliver health and social care in private homes remain unprotected legally in this setting from second-hand smoke exposure (SHS). **Methods:** Fourteen individuals took part in either an in-depth telephone interview (n = 11) or an online focus group discussion (n = 3), including home-care workers (n = 5) and managers (n = 5) based in Lanarkshire (Scotland) and local/national policy makers (n = 4). Participants were asked about the extent to which exposure to SHS is an issue during home visits and possible additional measures that could be put in place to eliminate exposure. **Results:** Participants highlighted the difficulties in balancing the provision of care in a person's own home with the right of workers to be able to breathe clean air and be protected from SHS. Current strategies to reduce staff exposure to SHS during home visits were often reported as inadequate with SHS not a hazard considered by managers beyond protecting pregnant staff or those with pre-existing respiratory conditions such as asthma. Simple respiratory protective equipment (as used during the COVID-19 pandemic) was rightly identified as being ineffective. Methods such as nicotine replacement therapy and e-cigarettes were identified as potential ways to help people who smoke achieve temporary abstinence prior to a home visit. **Conclusion:** Implementing appropriate and proportionate measures to protect home-care workers from the harms posed by SHS should be a priority to help protect the health of this often overlooked occupational group.

O'Donnell et al. 2025.

Annals of Work Exposures and Health, vol. 68, no. 9.

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Keywords: Home-care workers; qualitative; second-hand tobacco smoke.

Evidence Level: 5B

Link: <https://pmc.ncbi.nlm.nih.gov/articles/PMC11586273/>

Ergonomics

Shoulder kinematics during cyclic overhead work are affected by a passive arm support exoskeleton

Purpose: We investigated the influence of passive arm-support exoskeleton (ASE) with different levels of torque (50, 75, and 100%) on upper arm osteokinematics. **Methods:** Twenty participants completed a cyclic overhead drilling task with and without ASE. Task duration, joint angles, and angular acceleration peaks were analysed during ascent and descent phases of the dominant upper arm. **Results:** Maximum ASE torque was associated with decreased peak acceleration during ascent (32.2%; SD 17.8; $p < 0.001$) and descent phases (38.8%; SD 17.8; $p < 0.001$). Task duration remained consistent. Increased torque led to a more flexed (7.2°; SD 5.5; $p > 0.001$) and internally rotated arm posture (17.6°; SD 12.1; $p < 0.001$), with minimal changes in arm abduction. **Conclusion:** The small arm accelerations and changes in osteokinematics we observed, support the use of this ASE, even while performing overhead cyclic tasks with the highest level of support.

Casu et al. 2025.

Applied Ergonomics, vol. 121.

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(<https://creativecommons.org/licenses/by-nc-nd/4.0/>)

Keywords: Arm acceleration; joint angles; passive exoskeleton.

Evidence Level: 3B

Link: <https://www.sciencedirect.com/science/article/pii/S0003687024001340?via%3Dihub>

Chronic Health Issues

A systematic analysis of the burden of disease attributable to occupational noise-induced hearing loss in China based on the 2019 global burden of disease study

Background: Occupational noise has long been recognized as a significant risk factor for hearing loss, particularly among workers. This study aimed to assess the disease burden of hearing loss caused by occupational noise in China from 1990 to 2019, with a focus on differences across sex and age groups, so as to address the existing gaps in the Global Burden of Disease Study (GBD) reports. By analysing changes in years lived with disability (YLDs) among different sex and age groups over the past 30 years, this study provides valuable insights for the development of occupational noise safety measures in China.

Methods: We extracted data on the burden of hearing loss attributable to occupational noise from the 2019 Global Burden of Disease study. R software (version 4.12) was used to calculate the YLDs, age-standardized rates (ASRs), and average annual percent change (AAPC), stratified by age and sex. The Joinpoint regression model was used to analyse the trends in the burden of disease attributable to occupational noise exposure from 1990 to 2019. **Results:** In China, the YLDs attributable to occupational noise-induced hearing loss in 2019 were 2.3277 million [95% uncertainty interval (UI): 1.5779-3.3478 million, marking a 70.95% increase compared with that in 1990. Throughout the study period, YLD rates exhibited a declining trend, with rates of 127.7 per 100,000 (95% UI: 87.4-181.4) in 1990 and 119.8 per 100,000 (95% UI: 81.2-182.1) in 2019. Using the Joinpoint regression model, the annual percent change (APC) in age-standardized YLD rates for occupational noise-related hearing loss initially increased from 1990 to 2000, followed by a decline, reaching its lowest point in 2015. From a sex perspective, the burden of YLDs in Chinese males exceeded that in females, although the rate of decline was less pronounced in females. With regard to age, the number and rate of YLDs attributable to occupational noise-induced hearing loss generally increased with age, particularly among middle-aged individuals and older adults. However, from 1990 to 2019, the number of YLDs attributable to occupational noise-induced hearing loss decreased among young people aged 15-19 years, accompanied by a significant reduction in YLDs rates. **Conclusion:** Hearing loss attributable to occupational noise represents a substantial public health concern, especially among middle-aged and older adult workers in China. These findings underscore the importance of implementing effective measures to mitigate occupational noise exposure.

Wang et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: China; Global burden of disease study (GBD); hearing loss; occupational noise; Years lived with disability (YLDs).

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-21094-4>

Survival analysis shows tuberculosis patients with silicosis experience earlier mortality and need employer-led care models in occupational settings in India

India's high tuberculosis (TB) burden is exacerbated by concurrent silicosis, which increases TB susceptibility and worsens treatment outcomes. Limited studies on TB patients with silicosis highlight the need to address this vulnerable group's specific challenges, particularly to improve diagnosis and management. This retrospective cohort study analyzed survival data from 137 silico-tuberculosis and 2,605 TB-only patients in Khambhat, India, using Kaplan-Meier curves, log-rank tests, and comparisons between Cox proportional hazards and accelerated failure time (AFT) models. The lognormal AFT model, selected for its lowest Akaike Information Criterion (AIC), estimated survival times based on age, gender, HIV status, and prior TB treatment. Among the 2,742 patients, 309 (11%) died within 27 months. Median time from diagnosis to outcome was shorter for deceased patients (1.7 months) than for censored patients (5.6 months, $p < 0.001$, median test). Kaplan-Meier analysis showed a significantly steeper survival decline for silico-tuberculosis patients ($p < 0.001$, log-rank test). Silico-tuberculosis was associated with a two-fold increased mortality risk (HR = 2.0, 95% CI: 1.4-3.0, $p < 0.001$, Cox-proportional hazards regression). The lognormal AFT model indicated silico-tuberculosis patients had 36% of the median survival time compared to TB-only patients (16 vs. 44 months). These findings highlight significantly earlier mortality in silico-tuberculosis patients, underscoring the need for targeted, employer-led care models and TB-silicosis collaborative screening within India's TB program for high-risk occupational groups.

Rupani et al. 2025.

Scientific Reports, vol. 14, no. 1.

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Keywords: Accelerated failure time model; agate-stone workers; cox regression; employer-led care model; india; silico-tuberculosis; silicosis; survival analysis; tuberculosis; tuberculosis elimination.

Evidence Level: 4B <https://pubmed.ncbi.nlm.nih.gov/39604205/>

Link: <https://www.nature.com/articles/s41598-024-80367-5>

Occupational Exposure

Influence of exposure duration on human pressure-induced inflammatory responses: Comparison between tunnel workers and underwater divers

Information is scarce on human responses to high pressure exposures out of water, such as related to tunnel construction workers. We hypothesized that differences in the longer durations of exposures for tunnel workers versus underwater divers' results in greater inflammatory responses linked to the pathophysiology of decompression sickness (DCS). Blood was analysed from 15 tunnel workers (36.1 ± 10.5 (SD) years old, 6 women) exposed to 142-156 kPa pressure for 4.1-4.9 h compared to 8 SCUBA divers (39.3 ± 13.3 (SD) years old, 6 women) exposed to 149 kPa for 0.61 hours. Despite differences in pressure duration between groups, elevations were the same for blood microparticles (MPs) (128 ± 28% MPs/μl) and intra-MPs interleukin (IL-1β) (376 ± 212% pg/million MPs), and for decreases of plasma gelsolin (pGSN, 31 ± 27% μg/mL). The number of circulating CD66b + neutrophils and evidence of cell activation, insignificant for divers, increased in tunnel workers. Across 3 exposures, the mean neutrophil count increased 150 ± 11%. Neutrophil activation increased by 1 to 2% of cells expressing cell surface CD18, myeloperoxidase, platelet-specific CD41, and decrease of cell bound pGSN. We conclude that MPs elevations occur rapidly in humans and reach steady state in minutes with pressure exposures and neutrophil activation requires significantly longer exposure times.

Imtiyaz et al. 2025.

Psychological Reports, vol. 12, no. 22.

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Keywords: Decompression sickness; microparticles; neutrophil activation; plasma gelsolin.

Evidence Level: 5B

Link: <https://physoc.onlinelibrary.wiley.com/doi/10.14814/phy2.70130>

Occupational benzene exposure and risk of head and neck cancer: A systematic review and meta-analysis

Introduction: Benzene, an aromatic hydrocarbon, is a well-known leukemogen. To date, the link between benzene exposure and solid cancers is under examination. Our objective is to perform a systematic review and meta-analysis to evaluate if the occupational exposure to benzene is associated with the incidence and mortality of head and neck cancers (HNCs). **Methods:** We systematically reviewed the literature for pertinent cohort studies mentioned in the most recent IARC Monograph on benzene working exposure and other cohorts and case-controls identified via a literature search performed in PubMed, Scopus, and Embase, from their inception to March 2024. Stratified multilevel meta-analyses according to study design, cancer type, industrial sector, quality score of the articles, geographic region and risk of exposure bias were conducted. **Results:** A total of 29 independent studies were included in our review and multilevel meta-analysis. The findings revealed a borderline association between exposure to occupational benzene and incidence of HNCs (RR = 1.27, 95% CI = 1.00-1.64, I^2 level2 = 0%, I^2 level3 = 43.30%, $P < 0.05$). In addition, we found a significant increased overall risk of HNCs in females (RR = 1.68, 95% CI = 1.07-2.61; I^2 level2 = 0%, I^2 level3 = 0%, $P = 0.433$). Stratification analysis according to cancer sites showed a significant increase in risk of nose & sinuses cancers (RR = 3.72, 95% CI = 2.07-6.68; I^2 level2 = 34.13%, I^2 level3 = 0%, $P = 0.17$). European cohorts (RR = 1.31, 95% CI = 1.08-1.59, $p < 0.01$) and lower quality studies (RR = 1.39, 95% CI = 1.00-1.91; I^2 level2 = 0%, I^2 level3 = 45.94%, $P < 0.001$). No evidence of publication bias was found (Egger test $P = 0.103$). **Conclusions:** In conclusion, this systematic review and meta-analysis provide evidence that workers with occupational exposure to benzene might be at increased risk of HNCs, in particular for nose & sinuses cancer. However, it is essential to consider the limitations of the studies, particularly residual confounding, and the areas that need further study to improve our understanding of the subject.

Godono et al. 2025.

Environmental Research, vol. 263.

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Keywords: Benzene; larynx; occupational exposure; occupational health; oral cavity; pharynx; sinuses; systematic review.

Evidence Level: 1A

Link: <https://www.sciencedirect.com/science/article/pii/S0013935124019406?via%3Dihub>

Metabolic changes associated with PFAS exposure in firefighters: A pilot study

This pilot study investigated the association between occupational exposure to per- and polyfluoroalkyl substances (PFASs) and metabolic profiles among two groups of aviation firefighters ($n = 37$), with an average of 6 and 31 years of working experience (here referred as junior and senior firefighters) at airports across Australia, with samples collected in 2013. PFAS levels in serum were determined in a previous study to be >17 times higher in the senior firefighter group, reflecting the difference in their occupational exposure to fluorosurfactants among the groups. The aim was to examine metabolic patterns across a broad range of PFAS exposure by comparing metabolic differences and their associations with PFAS levels. In this cross-sectional study, the length of firefighting experience and PFAS levels in serum were both further associated with changes in several classes of metabolites, including free fatty acids, bile acids, amino acids, lipids and metabolites related to gut microbial metabolism. The metabolites associated with the length of firefighting experience showed similarities with the metabolites associated with PFAS levels. A non-monotonic response to PFAS concentrations, particularly in saturated fatty acids, was also observed. In the junior firefighter group, the PFAS concentrations were positively associated with saturated fatty acids, i.e., the saturated fatty acid levels increased with increased PFAS levels. In the senior firefighter group, the trend was opposite, with saturated fatty acids decreasing with increasing levels of PFAS. Accounting for

potential confounding factors such as BMI and age could not explain the results. While the study population was small, our results plausibly indicate that PFAS exposure can lead to a metabolic compensation strategy that is disrupted at high, long-term exposures. Our study also suggests that serum metabolites serve as better effect-based markers of the impact of exposure than the traditional clinical measurements alone, such as total triglycerides or total cholesterol.

Rotander et al. 2025.

Science of the Total Environment, vol. 953.

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Keywords: Aqueous film-forming foams; firefighters; metabolomics; PFAS.

Evidence Level: 3A

Link: <https://www.sciencedirect.com/science/article/pii/S0048969724061606?via%3Dihub>

Early biological effects in outdoor workers exposed to urban air pollution: A systematic review

Urban outdoor workers (OWs), identified as professionals spending most of their working shifts in an urban environment, are exposed for at least 8 h/day to traffic air pollution, leading to potential health risks. This paper reports the results of a systematic review aimed at identifying the potential health outcomes of exposure to air pollutants for OWs, focusing mainly on police officers, drivers and street vendors. Health outcomes were analysed in terms of early biological effects quantified with specific measured indicators. The main inclusion criterion was the assessment of at least one early biological effect (genetic and epigenetic damage/alterations, inflammation or oxidative stress indicators, or hormonal imbalance) in a population of OWs exposed to urban air pollution. By applying the PRISMA workflow, 82 papers were included in this study. The results showed that the measured pollutant concentrations were significantly below the current occupational limit values, while exceeds the indications of WHO for urban air pollution. This exposure led to significant alterations of biological markers in OWs with respect to non-exposed subjects. In particular, OWs presented an increased frequency of micronuclei and DNA adducts as the main DNA alterations, while police officers (a category of highly exposed OWs) showed hormonal alterations affecting mainly the hypothalamic-pituitary-gonadal axis. Concerning oxidative stress and inflammation, all the analysed matrices (i.e. blood, sputum, urine and lachrymal fluids) showed increased indices for OWs respect to non-exposed groups. Therefore, the evaluation of effect biomarkers to detect early alterations provides crucial information for supporting the occupational risk management of OWs and, at broader level, allows for an insight of the early-stage health outcomes due to urban air pollution.

Sellaro et al. 2025.

Environmental Pollution, vol. 362.

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Keywords: Early biological effects; exposome; occupational risks; outdoor workers; urban air pollution.

Evidence Level: 1A

Link: <https://www.sciencedirect.com/science/article/pii/S0269749124017007?via%3Dihub>

Noise exposure in the workplace, genetic susceptibility, and incidence of atrial fibrillation: A prospective cohort study

Background: No study explored the association of noise exposure in the workplace and genetic susceptibility with incidence of atrial fibrillation (AF). We aimed to assess the separate and joint relationship of noise exposure in the workplace and genetic susceptibility with the risk of AF. **Methods and results:** We included 167 577 participants without AF at baseline in UK Biobank. Cox proportional hazards models were used to assess the separate and joint association of noise exposure in the workplace and genetic susceptibility with the risk of AF. During a median follow-up of 11.83 years, we observed 9355 AF cases. Compared with no noise exposure in the workplace, the hazard ratios (HRs) and were 1.08 (95% CI, 0.99-1.18) for noise exposure in the workplace of <1 year, 1.03 (95% CI, 0.95-1.12) for noise exposure in the workplace of around 1 to 5 years, and 1.08 (95% CI, 1.02-1.14) for noise exposure in the workplace of >5 years, respectively, after adjusting for potential confounders. Genetic risk was positively associated with AF, compared with low genetic risk (tertile 1), the HRs were 1.50 (95% CI, 1.41-1.59) for medium genetic risk (tertile 2) and 2.51 (95% CI, 2.38-2.65) for high genetic risk (tertile 3). However, no interaction between

noise exposure in the workplace and genetic susceptibility was observed ($P>0.05$). **Conclusions:** Long-term noise exposure in the workplace is positively associated with a higher incidence of AF regardless of genetic background.

Li et al. 2025.

Journal of the American Heart Association, vol. 13, no. 21.

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Keywords: Atrial fibrillation; genetic susceptibility; noise exposure; workplace.

Evidence Level: 4B

Link: <https://pubmed.ncbi.nlm.nih.gov/39424418/>

Health impact of environmental and industrial noise: A narrative review

Industrial noise sources are among the environmental noise sources that are ranked second among the causes of ill health in Europe by the World Health Organization. The aim of this paper is to summarize and review of published information focusing on noise annoyance from industrial activities and mining. A search for articles was performed using the bibliographic databases platforms. The epidemiological evidence shows that environmental noise may be associated with cardiovascular and metabolic diseases, impaired cognitive development in children, mental health, post-irritability, and sleep disturbances. As a result of efforts to minimize the effects of industrial noise on human health, the New South Wales Environment Protection Authority published A Guide to the Noise Policy for Industry in 2017, which sets out recommended noise levels, methods, and procedures for noise management based on the latest scientific evidence. Social networks can be used to assess the population's noise annoyance and to verify the effectiveness of the measures. The industrial noise sources are typically defined by low-frequency noise. Low-frequency noise has very low attenuation and is only slightly affected by obstacles, therefore it can be a major cause of night noise annoyance. An association was confirmed between exposure to low-frequency noise and sleep disturbance, psychological problems, cognitive impairment, increased social conflicts, anxiety, emotional instability, nervousness, and reduced mental performance - concentration, and visual perception. In view of the long tradition of mining and industry, the assessment of noise from these activities from the perspective of its impacts on human health is an inherent part of legislative processes.

Stanovská et al. 2025.

Medycyna Pracy, vol. 75, no. 5.

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Keywords: Environmental noise; health effects; industrial noise; low-frequency noise; noise annoyance; sleep disturbance.

Evidence Level: 1A

Link: <https://medpr.imp.lodz.pl/Health-impact-of-environmental-and-industrial-noise-a-narrative-review,190881,0,2.html>

Biomonitoring of firefighters' exposure to priority pollutant metal(loid)s during wildland fire combat missions: Impact on urinary levels and health risks

Wildland firefighters are exposed to metal(loid)s released during wildfires through vegetation combustion, which also promotes remobilization of accumulated anthropogenic metal(loid)s. Studies biomonitoring metal(loid)s exposure promoted exclusively by wildfire suppression activities are lacking. This work aimed to characterize, for the first time, the impact of real-life wildland firefighting operations on urinary levels of priority pollutant metal(loid)s [14 included in ATSDR, 11 in USEPA, and 4 in Human Biomonitoring for Europe Initiative priority lists] in firefighters. Spot urines were sampled pre-exposure (105 non-smokers, 76 smokers) and post-exposure to firefighting activities (20 non-smokers, 25 smokers); among those, paired samples were collected from 14 non-smoking and 24 smoking firefighters. Smokers displayed significantly higher baseline levels of zinc (28 %), lithium (29 %), cadmium (55 %), rubidium (13 %), and copper (20 %) than non-smokers. Following wildfire suppression, the concentration of the WHO potentially toxic metal(loid)s rose from 2 % to 3 % in smokers and 2 % to 5 % in non-smokers (up to 4 % for all firefighters

and up to 5 % in paired samples). Levels of nickel (33-53 %), antimony (45-56 %), and cesium (40-47 %) increased significantly post-exposure in non-smokers (in all firefighters and in paired samples), whose urinary concentrations were generally more impacted by wildfire emissions than those of smokers. Arsenic (80 %) displayed the only significant increase post-exposure in smokers, being the best discriminant of exposure to wildfire emissions in these subjects. Significant positive correlations were found for age and/or career length with cadmium, lead, barium, strontium, and mercury, and for body mass index with arsenic. The reference/guidance values were exceeded for arsenic, zinc, cesium, nickel, antimony, cadmium, lead, thallium, mercury, copper, and cobalt in 1-90 % of firefighters suggesting augmented health risks due to wildfire combating and emphasizing the need of mitigation strategies. This study also provides biomonitoring data to help setting reference values for the occupationally exposed part of population.

Paiva et al. 2025.

Science of The Total Environment, vol. 953.

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Keywords: Biomarkers; paired samples; post-exposure; tobacco consumption; urine; wildfire emissions.

Evidence Level: 5B

Link: [https://linkinghub.elsevier.com/retrieve/pii/S0048-9697\(24\)06261-2](https://linkinghub.elsevier.com/retrieve/pii/S0048-9697(24)06261-2)

Human exposure to asbestos in central Asian countries and health effects: A narrative review

The discovery of the detrimental effects of asbestos on human health came long after its widespread use, with the first scientific evidence of asbestos-related diseases emerging in the late 19th and early 20th centuries. Despite efforts to ban its use, asbestos continues to be mined and used in Central Asia (as well as in Russia, China, and other countries). To gain a deeper understanding of the situation in Central Asia, we have conducted a systematic review of scientific literature on the use of asbestos, exposure assessment, and health consequences of asbestos exposure in this geographic area. This review encompasses studies about exposure assessments, epidemiological data, and biochemical or clinical surveys conducted in Kazakhstan, Uzbekistan, Tajikistan, Turkmenistan, and Kyrgyzstan. A total of 18 articles met the inclusion criteria, and their content is summarised in this review, which represents the first attempt to systematically examine research on asbestos and its impact on the health of workers and the general population in Central Asia countries, including literature published in Russian and English. The findings here highlighted the substantial limitations of the currently available knowledge about the impact of asbestos on health in this geographical area.

Kurzhunbaeva et al. 2025.

La Medicina del Lavoro, vol. 115, no. 6.

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Keywords: Asbestos; health; exposure.

Evidence Level: 1B

Link: <https://www.mattioli1885journals.com/index.php/lamedicinadellavoro/article/view/15453>

Heat exposure and productivity loss among construction workers: A meta-analysis

Background: Global warming is raising increasing concerns about its impact on worker productivity, particularly in industries like construction where outdoor physically demanding jobs are prevalent. This study aimed to perform a meta-analysis to assess the existing evidence on the impact of heat exposure on productivity loss among construction workers. **Methods:** We conducted a comprehensive literature search across six databases-Web of Science, PubMed, Embase, Scopus, ScienceDirect, and IEEE-covering the period from database inception to September 18, 2024. The Joanna Briggs Institute (JBI) critical appraisal checklist was used for quality assessment. A random-effect model meta-analysis was performed, and publication bias was evaluated by Egger's and Begg's tests. **Results:** From an initial pool of 1209 studies, 14 met the inclusion criteria, representing data from 2387 workers. Our findings indicate that 60% (95% CI: 0.48-0.72, $p < 0.01$) of construction workers exposed to elevated temperatures experienced significant productivity loss. Productivity loss was more pronounced when the Wet Bulb Globe Temperature (WBGT) exceeded 28 °C or when ambient temperatures surpassed 35 °C. Furthermore, workers aged over 38

(proportion = 0.61, 95% CI: 0.49-0.72) and teams with female workers (ratio = 0.74, 95% CI: 0.60-0.87) were more susceptible to productivity loss. **Conclusions:** This review highlights heat exposure as a significant factor affecting productivity in the construction industry. We recommend prioritizing the protection of vulnerable groups such as women and older workers, developing innovative technologies and equipment for working in hot conditions, and improving the working environment to safeguard workers' health and productivity. Further research is needed to investigate the long-term health impacts of heat exposure and develop strategies for optimizing microclimate management in construction settings.

Han et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: Construction workers; heat exposure; meta-analysis; productivity.

Evidence Level: 1A

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20744-x>

Sedentary Practices

Prevalence and determinants of healthy and balanced diet among office workers in a sedentary working environment: evidence from Southern Sri Lanka

Background: An unhealthy diet is a key risk factor for non-communicable diseases (NCD), which account for a significant number of premature deaths and disability-adjusted life years worldwide. Office workers are reported to have unhealthy and unbalanced diets, while being sedentary due to the nature of their work, placing them at a greater risk of NCD. This study aimed to determine dietary intake and associated factors among sedentary office workers in Southern Sri Lanka. **Methods:** A cross-sectional study was conducted among 518 sedentary workers in 20 offices in the Galle district. Socio-demographic, health and work-related factors and dietary practices were assessed using a self-administered questionnaire. Twenty-four-hour dietary recall was used to assess dietary intake, which was converted into the number of servings from each food group. Healthy dietary intake was defined as 'adherence to the numbers of servings recommended in Food Based Dietary Guidelines for Sri Lankans for more than three food groups including cereal and cereal-based foods, fruits, and vegetables, with the consumption of one or no unhealthy food per day'. **Results:** Only 4.6% (n = 24) of the participants consumed a healthy diet, while a considerable proportion had the recommended intake of cereal-based foods, vegetables and fish, meat and pulses (65.3%, 65.8% and 50.8%, respectively). Intake of fruits, dairy products, nuts and seeds was low among the participants. Meal skipping and group eating were significantly associated with an overall unhealthy diet. Stratified analysis showed sex as an effect modifier for the association between group eating and unhealthy diet. In multivariate analysis, none of the factors showed a significant association with healthy dietary intake. **Conclusions:** The dietary intake of sedentary office workers was not up to the recommendations. Meal skipping and group eating were associated with unhealthy dietary intake. This study recommends introducing interventions to improve the intake of fruits, dairy products, nuts, and seeds for sedentary office workers.

Godevithana et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: Dietary intake; dietary risk factors; eating behaviours; healthy eating; sedentary office workers.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20935-6>

Association between ocular diseases and screen time and sedentary time derived from job-exposure matrices

After developing job-exposure matrices (JEMs) for screen and sedentary time, we aimed to assess the associations between the JEM-derived exposures and various ocular diseases. We collected data from patients hospitalized from 2005 to 2021. JEMs were developed from 41,718 patients with occupational information and screen and sedentary times. The adjusted means of screen and sedentary time were

calculated for 143 occupational groups and categorized into three classes based on the tertiles. The associations between ocular diseases and these JEM-derived exposures were examined using multivariable conditional logistic regression for 727,589 patients. The odds ratios of the class with highest screen time were 1.05 (95% confidence interval, 1.01-1.09) for cataract, 1.24 (1.06-1.45) for primary open-angle glaucoma (POAG), 1.26 (1.06-1.49) for rhegmatogenous retinal detachment (RRD), 1.49 (1.26-1.76) for ptosis, and 0.39 (0.27-0.57) for pterygium. The odds ratios of the class with highest sedentary time were 1.05 (1.01-1.09) for cataract, 1.24 (1.05-1.46) for RRD, 1.68 (1.42-1.99) for ptosis, and 0.60 (0.42-0.84) for pterygium. Both screen and sedentary time were positively associated with cataract, RRD and ptosis. Interestingly, POAG had a positive association with only screen time.

Sano et al. 2025.

Scientific Reports, vol. 14, no. 1.

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Keywords: Glaucoma; occupational exposure; ptosis; retinal detachment; risk factors; screen time; sedentary behaviors.

Evidence Level: 5B

Link: <https://www.nature.com/articles/s41598-024-74854-y>

Physical Activity

Does the association between physical activity during work and leisure and blood pressure differ across sex? A cross-sectional compositional data analysis in a Danish population-based cohort

Background: A proposed risk factor for cardiovascular disease is high occupational physical activity (OPA), which seems to increase blood pressure (BP), in contrast to leisure time physical activity. Increased BP may lead to hypertension that increase the risk of cardiovascular disease and premature death. Exposures to OPA differ across sex and also within occupational group. Thus, we aimed to investigate associations between OPA and LTPA and BP among men and women using compositional data analysis. **Methods:** This population-based cross-sectional study used data from the Copenhagen Aging and Midlife Biobank. OPA and LTPA were self-reported time spent in light physical activity (LPA) during work = standing or walking work; moderate-to-vigorous physical activity (MVPA) during work = heavy manual work; LPA during leisure = light physical activity during leisure; MVPA during leisure = biking or walking as commute to work + daily amount of MVPA during leisure, and sleep. Systolic and diastolic BP (SBP, DBP; mmHg) was measured during sitting rest. We used linear regression models to investigate the association between OPA and LTPA, expressed as isometric log-ratios, and BP. The models were used to predict the BP for reallocated physical activity (PA) compositions (i.e., theoretically 'moving' time from sitting to PA within each domain). Specifically, we predicted the BP for each reallocated PA compositions and calculated the difference in BP between the reallocated compositions and the mean composition. **Results:** In total, 1,334 women and 2,983 men (mean age 55.1 and 52.5 years, respectively) were included in the analyses. About 50% of the women, and 66% of the men, had hypertension. The linear regressions based on the compositional data analysis, showed no association between OPA and LTPA and SBP among women or men. Among men, less time spent sitting and more time spent in LTPA, compared to the mean composition, was associated with a lower DBP (e.g., 60 min less sitting and 60 min more LTPA: -0.25, 95% CI: -0.05, -0.45 mmHg).

Conclusion: No association between OPA and LTPA and BP was observed across sexes, except between LTPA and DBP among men. This could be due to information bias and lack of precision in self-reported time use data of PA.

Johansson et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: CAMB; high blood pressure; occupational physical activity; physical activity health paradox; prevention of cardiovascular disease; work environment.

Evidence Level: 5B

Link: <https://link.springer.com/article/10.1186/s12889-024-20302-5>

Associations between active commuting and sickness absence in Finnish public sector cohort of 28 485 employees

Active commuting can be beneficial for health. We examined whether active commuting by walking or cycling was associated with a lower risk of sickness absence in a Finnish public sector cohort of 28 485 employees. We used negative binomial regression to test associations of weekly active commuting in kilometers (no, low, moderate, and high dose) with all-cause sickness absence. Sickness absence data from employers registers comprised the number of (1) sickness absence days, (2) short (1-9 days) and (3) long (≥ 10 days) sickness absence episodes during 12- and 24-month follow-ups. The models were adjusted for sociodemographic factors, lifestyle risk factors, and previous sickness absence. To demonstrate absolute risk, we calculated sex- and age-adjusted incidence for sickness absence per 100 person years for each active commuting exposure group. The associations of cycling and walking were additionally studied in separate analyses. Compared to passive commuters (no active commuting), high dose of active commuting (mean of 61 km/week) was associated with an 8%-12% lower relative risk of sickness absence days and an 18% lower relative risk of long episodes. The absolute rate of sickness absence per 100 person-years was up to 452 days and 10 long episodes lower in the high-dose active commuters group. In the further analyses separating cyclists and walkers, similar reduced risks were observed only among high-dose cyclists. Our findings suggest that regular active commuting by bicycle has potential for reducing sickness absence by reducing the risk of long sickness absence episodes.

Kalliolahti et al. 2025.

Scandinavian Journal of Medicine and Science in Sports, vol. 75, no. 5.

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Keywords: Active commuting; cohort study; cycling; occupational health; physical activity; prospective study; sickness absence; walking.

Evidence Level: 4B

Link: <https://onlinelibrary.wiley.com/doi/10.1111/sms.70001>

Musculoskeletal Health

The association of different types of stress, and stress accumulation with low back pain in call-center workers: A cross-sectional observational study

Background: Low back pain (LBP) is a common health complaint and a prominent factor in the development of LBP among the working population is stress. Mostly, stress is addressed as a general problem, which is why LBP prevention programs are often imprecise. Accordingly, a closer look at the association between specific stress types and the development of LBP is necessary. Therefore, this paper aims (1) to identify the stress types most closely associated with LBP; (2) to examine the relationship between stress accumulation and LBP. **Methods:** $n = 100$ call-center workers were approached for participation. Stress levels and LBP were assessed with questionnaires (TICS, ERI, CPG, BPI) and hair cortisol levels were measured (ELISA-KIT, 3-months period). Mann-Whitney U tests were used to identify stress types most closely associated with LBP. Further, ANCOVA analysis was conducted to determine the association of the number of experienced stress types with LBP intensity and impairment.

Results: Finally, data from $n = 68$ participants (mean age: $43.2 (\pm 12.8)$ years; 62% female) were used for presented analysis. Participants, who were affected by work-related stress showed higher pain severity (excessive demands at work: 23.6 ± 21.8 vs. 42.4 ± 25.0 ($p = 0.005$)) and more impairment (excessive demands at work: 13.7 ± 17.6 vs. 28.7 ± 22.3 ($p = 0.003$); work overload: 15.4 ± 20.4 vs. 26.3 ± 17.4 ($p = 0.009$)) than their less affected colleagues. Other stress types (e.g. Effort, Reward) showed no significant association with LBP. Furthermore, participants who experienced two or more of the most associated stress types simultaneously suffered from stronger pain and more impairment ($p < 0.01$). **Conclusions:** The results suggest that it is essential to divide and evaluate stress in specific domains. Furthermore, the accumulation of different stress types and the resulting physiological load should be taken into account

when designing prevention and intervention programs. Results may be of high relevance for the development of LBP prevention programs for people within a predominantly sitting working context.

Brenner-Fliesser et al. 2025.

BMC Musculoskeletal Disorders, vol. 25, no. 1.

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Keywords: Call-center workers; hair-cortisol; low back pain; sitting work; stress; stress types.

Evidence Level: 4B

Link: <https://bmcmusculoskeletdisord.biomedcentral.com/articles/10.1186/s12891-024-08087-5>

Musculoskeletal disorders among truck drivers: A systematic review and meta-analysis

Background: The job of truck driving exposes the drivers to various risk factors of musculoskeletal disorders (MSDs) due to unfavourable working conditions. Hence, this research was conducted to investigate the frequency of MSDs among individuals working as truck drivers. **Materials and methods:** The present research followed the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines, and its protocol was registered in international prospective register of systematic review (PROSPERO) under the code CRD42024507985. Databases such as PubMed, Scopus, Web of Science, Science Direct, SID, ISC, and Google Scholar were searched without time restrictions until February 7th, 2024 to identify relevant articles. Meta-analysis was conducted using a random effects model, and heterogeneity between studies was evaluated using the I^2 index. Additionally, STATA (version 14) was utilized for conducting data analysis. **Results:** In the initial search, 678 articles were identified. After removing duplicates and articles unrelated to the research objective and inclusion criteria, 15 articles were included in the meta-analysis, involving 2,662 truck drivers. The findings from the research show that 61.75% of truck drivers have musculoskeletal disorders (MSDs) (95% CI: 46.98-76.52, $I^2 = 96%$, $P < 0.001$). Additionally, the prevalence of MSDs in various parts of the body was estimated as follows: shoulder (31.5%), neck (25.79%), lower back (23.46%), knee (22.26%), ankle (20.46%), wrist (20.25%), upper back (18.65%), elbow (11.91%), and hip (7.50%). **Conclusion:** According to the study findings, the prevalence of MSDs among truck drivers is relatively high, and several risk factors contribute to these disorders. Therefore, to decrease the prevalence of MSDs among truck drivers, it is recommended to develop and implement essential training programs, ergonomic interventions, and regular evaluations of the work environment.

Tahernejad et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: Ergonomics; musculoskeletal disorders; prevention; risk factors; truck drivers.

Evidence Level: 1A

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20611-9>

Effect of a smartphone self-management digital support system for low-back pain (selfBACK) among workers with high physical work demands: Secondary analysis of a randomized controlled trial

Objective: This study aimed to investigate whether physical work demands modify the effect of the selfBACK app, which is designed to support self-management of low-back pain. **Methods:** In a secondary analysis of the selfBACK trial with 346 employed participants, we stratified into low (N=165) and high physical work demands (N=181). Outcomes included the Roland-Morris Disability Questionnaire (0-24), a numeric rating scale for low-back pain intensity (0-10), the Pain Self-Efficacy Questionnaire (0-60), and work ability (0-10). Intervention effects were assessed at three- and nine-month follow-ups using a linear mixed model. **Results:** At three months, high physical demand workers with selfBACK showed a significant reduction in pain intensity [-0.8, 95% confidence interval (CI) -1.3- -0.2] compared to usual care. By nine months, the high physical demands workers with selfBACK reported reduced pain-related disability (-1.4, 95% CI -2.7- -0.1), improved pain self-efficacy (3.5, 95% CI 0.9-6.0), and lower pain intensity (-1.0, 95% CI -1.6- -0.4) compared to usual care. Low physical demands workers with selfBACK also improved pain self-efficacy [2.8 (95% CI 0.3-5.3)] compared to usual care. The impact of selfBACK was more noticeable among workers with high physical demands compared to their low physical demand counterparts, but no

statistically significant differences were found in any outcome. **Conclusions:** The selfBACK intervention had consistent effects across workers with high and low physical work demands, indicating that these demands did not modify its impact. Both groups experienced similar positive effects, highlighting the intervention's effectiveness across varying levels of physical work demands.

Rasmussen et al. 2025.

Scandinavian Journal of Work, Environment and Health, vol. 50, no. 8.

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Keywords: Smartphone; digital support; low-back pain; high physical work demands.

Evidence Level: 1B

Link: <https://www.sjweh.fi/article/4186>

Musculoskeletal disorders among bank workers: A systematic review and meta-analysis

Purpose: Bank employees are among the workers who are at a high risk of suffering from musculoskeletal disorders (MSDs) due to inactivity and prolonged sitting as well as static and poor postures. This study was conducted with the aim of systematic review and meta-analysis of the prevalence of MSDs among bank employees. **Materials and methods:** This review followed the PRISMA guidelines, and its protocol is registered in PROSPERO with the code CRD42024509728. Using several databases including PubMed, Scopus, Web of Science, Science Direct, SID, ISC, and Google Scholar, related studies were extracted without time limit until February 7th 2024. Simple random effects model and I² index were used respectively for performing meta-analysis and determining heterogeneity between studies. Finally, data analysis was done using the software STATA version 14. **Results:** After conducting the initial search, 1837 studies were identified in the information sources. After careful consideration, 28 studies were included in meta-analysis. The meta-analysis results revealed that 67.84% (95% CI: 61.21-74.47, I² = 97.4%, P < 0.001) of bank employees suffer from MSDs. These disorders affect various areas of the body with the following prevalence rates in the low back (49.19%), neck (46.11%), upper back (42.08%), shoulder (34.88%), hand (25.40%), hip/thigh (19.29%), knee (17.86%), ankle/foot (16.37%), and elbow (12.53%). **Conclusions:** The high prevalence of MSDs among bank employees is a concern, especially due to their sedentary behavior. It is important to increase awareness among bank employees about the risk factors of MSDs and design interventions to reduce their sitting time. Additionally, adjusting workstations according to ergonomic recommendations can help prevent MSDs in this occupational group.

Marzban et al. 2025.

BMC Musculoskeletal Disorders, vol. 25, no. 1.

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Keywords: Bank workers; ergonomics; musculoskeletal disorders; prevention; risk factors.

Evidence Level: 1A

Link: <https://bmcmusculoskeletdisord.biomedcentral.com/articles/10.1186/s12891-024-08077-7>

Working conditions, health status, and musculoskeletal disorders among hospital cleaning workers: A cross-sectional study in Turkey

Background: Cleaning workers face many workplace risk factors and may experience many health problems. In this context, this study aimed to evaluate the musculoskeletal disorders, the health status of hospital cleaning workers, and the working conditions and risk factors affecting the workplace environment. **Material and methods:** This cross-sectional study was conducted in a university hospital of Turkey. All the cleaning workers who have been working for ≥1 year were participants. The participants' socio-demographic and occupational characteristics, health complaints, workplace risk factors, occupational accidents, and ergonomic nonconformities were observed and questioned. **Results:** Four hundred thirty-eight cleaning employees participated in the study. In the past year, 19.6% of participants had an occupational accident. Of those, 24.4% did not report it, and 30.2% were absent from work. No pre-employment examination was reported by 36.8% of the participants, and periodic medical examinations were never undergone by 98.4%. Low back pain was experienced by 42.0% of the participants, while 29.5% reported shoulder pain and 28.8% knee pain. While working, 83.1% of the participants bent frequently, 82.2% repeated the same movement, and 73.2% stood for a long time. Chemical substances were the most

common workplace risk factors. There were significant differences according to age and gender in almost all musculoskeletal disorders. Gender differences were observed also in various health outcomes and occupational complaints. Repeated bending and prolonged standing were associated with hip/leg and foot/ankle pains; heavy lifting with low back, back, wrist/hand, and ankle/foot pains; and failure to the breaks with shoulder, knee and hip/leg pains. **Conclusions:** This research investigated the health issues and occupational safety challenges faced by hospital cleaning personnel. Specifically, it examined musculoskeletal disorders and work-related accidents, emphasizing gaps in regular health screenings for these workers. The findings underscore gender variations in these challenges and propose strategies to mitigate ergonomic risks encountered by cleaning staff. *Med Pr Work Health Saf.* 2024;75(5):397-413.

Medeni et al. 2025.

Medycyna Pracy, vol. 75, no. 5.

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Keywords: Hospital personnel; musculoskeletal disorders; occupational accidents; occupational health; occupational safety; risk factors.

Evidence Level: 4B

Link: <https://medpr.imp.lodz.pl/Working-conditions-health-status-and-musculoskeletal-disorders-among-hospital-cleaning,191790,0,2.html>

Development of a forest healing program for individuals with musculoskeletal disease risk and verification of its preventive effects

Preventive treatment is crucial in averting the onset of musculoskeletal diseases, particularly among individuals in high-stress occupations. This study aimed to develop a forest healing program and a standardized survey index to gauge its efficacy in mitigating stress and preventing musculoskeletal disorders. Service-oriented workers who engage in repetitive tasks but are not traditional office workers at risk of musculoskeletal issues were recruited. The forest healing program was crafted through a review of existing initiatives and identification of factors alleviating muscle tension and stress. A comprehensive survey index encompassing stress, depression, anxiety, quality of life, and somatization was designed. Participants were assessed using the Perceived Stress Scale (PSS), Somatization Scale (SOM), and the newly devised survey index before and after engaging in the developed forest healing program. Evaluation of 42 participants pre- and post-program revealed significant reductions in PSS ($25.857 \pm 8.120/17.905 \pm 5.958$; $P < .001$), SOM ($27.905 \pm 8.839/20.286 \pm 8.019$; $P < .001$), and standard survey index scores ($33.857 \pm 10.280/23.333 \pm 8.703$; $P < .001$). The developed forest healing program demonstrated substantial stress relief and muscle relaxation benefits, proving effective in preventing musculoskeletal diseases. Moreover, the standardized survey index emerged as a valuable tool for assessing stress related to such disorders, exhibiting correlations with PSS and SOM.

Moon et al. 2025.

Medicine, vol. 103, no. 49.

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Keywords: Musculoskeletal disease; risk; prevention; forest.

Evidence Level: 4B

Link: https://journals.lww.com/md-journal/fulltext/2024/12060/development_of_a_forest_healing_program_for.46.aspx

Effects of using exposure footwear for firemen and fitness training shoes on lower limb biomechanics during walking

Exposure footwear for firemen (EFF) is a crucial component of firefighters' personal protective equipment, designed to protect against hazards, such as heat, punctures, impact, and electrocution. However, its effect on gait biomechanics remains unclear. This study was aimed to investigate the influence of EFF on firefighters' lower limb biomechanical performance and the underlying mechanisms. Twenty healthy male firefighters (mean height: 175.41 ± 4.39 cm, mean weight: 65.74 ± 5.81 kg, mean BMI: 21.37 ± 2.17 kg/m²) were randomly assigned to wear EFF and fitness training shoes for comparison during walking tasks. Lower

limb biomechanics were analyzed, focusing on joint range of motion (ROM), moments, work and muscle activity. The results indicated that wearing EFF led to increased hip and knee joint ROM in the sagittal plane, reduced ankle and metatarsophalangeal (MTP) joint ROM in the sagittal plane, increased peak hip flexion/extension and ankle dorsiflexion moments, and decreased MTP joint dorsiflexion peak moments. EFF use also resulted in increased positive work done by the hips, increased negative work done by the ankles, reduced positive work done by the ankle joints, and increased negative work by the MTP joint. The activation levels of the rectus femoris and tibialis anterior muscles were higher when wearing EFF compared to fitness training shoes. In conclusion, EFF significantly alters the biomechanical characteristics of firefighters' lower limbs during walking, leading to elevated muscle activation in the rectus femoris and tibialis anterior. This increased demand on the lower limb muscle groups for mechanical energy generation heightens the risk of fatigue, musculoskeletal injuries, and osteoarthritis. Therefore, it is recommended that EFF boots be designed using lightweight and flexible materials. Additionally, training programs should prioritize strengthening the hip flexor/extensor, ankle dorsiflexor muscle groups, and especially the rectus femoris and tibialis anterior muscles.

Duan et al. 2025.

Scientific Reports, vol. 14, no. 1.

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Keywords: Exposure footwear; firemen; fitness training; walking.

Evidence Level: 5B

Link: <https://www.nature.com/articles/s41598-024-77407-5>

Passive shoulder occupational exoskeleton reduces shoulder muscle coactivation in repetitive arm movements

Humans naturally employ muscle coactivation to facilitate a broad range of movements, enhancing joint stability and movement accuracy. However, excessive muscle coactivation can become unfavourable or even detrimental. This phenomenon is often observed in industrial workers who endure repetitive or prolonged joint stress, particularly in areas such as the shoulders. Prolonged stress can result in soft tissue damage and the onset of work-related musculoskeletal disorders (MSDs). In recent years, there have been efforts to mitigate the emergence of work-related MSDs among industrial workers through the implementation of upper-limb occupational exoskeletons (OEs). While previous research has demonstrated their effectiveness in reducing shoulder muscle activation, particularly in static and overhead work activities, there has been a lack of studies examining the impact of upper-limb OEs on muscle coactivation during repetitive arm movements. To bridge this gap in knowledge, our study systematically assesses the influence of a passive exoskeleton's anti-gravitational support on shoulder muscle coactivation during repetitive arm movements. Results show that peak and mean coactivation levels linearly decrease with the increase of the amount of anti-gravitational support provided by the upper-limb OE, reaching approximately 51% and 54%, respectively. Conversely, the percentage of the movement cycle corresponding to the coactivation peak appears unaffected by the level of assistance. This study marks the first instance in which a passive upper-limb OE has been shown to reduce shoulder muscle coactivations, potentially paving the way for a novel methodology in their evaluation.

Grazi et al. 2025.

Scientific Reports, vol. 14, no. 1.

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Keywords: Shoulder; muscle; exoskeleton; arm.

Evidence Level: 5B

Link: <https://www.nature.com/articles/s41598-024-78090-2>

Guiding and Supporting Mental Health and Wellbeing

Mental Health

Recommendations for guidelines for promoting mental health in the workplace: An umbrella review

Objectives: to summarize the recommendations of guidelines for promoting mental health in the workplace. **Methods:** an umbrella review, according to Joanna Briggs Institute and Preferred Reporting Items for Systematic reviews and Meta-Analyses methodological assumptions. Data collection was carried out in January 2021 and updated in July 2023 in the American Psychological Association, Cochrane Library, EMBASE, National Library of Medicine, and Scopus databases. Systematic reviews that assessed guidelines with recommendations for mental health care for workers were included. PROSPERO registration CRD42023461845. **Results:** four systematic reviews published between 2015 and 2018 were identified. The abstracts highlighted actions that facilitate and inhibit the recommendations as well as three categories of intervention: primary prevention - worker protection; secondary prevention - promoting workers' mental health; and tertiary prevention - supporting, monitoring and rehabilitating workers upon returning to work. **Conclusions:** the interventions are based on prevention, promotion and early recognition, support and rehabilitation of mental health problems.

Pinhatti et al. 2025.

Revista Brasileira de Enfermagem, vol. 77, no. 6.

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Keywords: Mental health; workplace.

Evidence Level: 1A

Link: <https://www.scielo.br/j/reben/a/9bkNBSstLmbWcBP4JFHPrtC/?lang=en>

Most people do not attribute their burnout symptoms to work

A prevailing belief among researchers is that burnout is a work-specific syndrome induced by intractable job stress. The validity of this belief, however, remains unclear. This cross-sectional study compared burnout with two general conditions, nonspecific psychological distress (NSPD) and exhaustion, in terms of (a) causal attributions to work and (b) associations with 11 job variables (e.g., job satisfaction). The study involved 813 individuals employed in Norway (70.5 % female). Burnout was assessed with the Burnout Assessment Tool; NSPD, with the K6; and exhaustion, with the Karolinska Exhaustion Disorder Scale. Results showed that only 27.7 % of participants with burnout symptoms attributed these symptoms to work. The proportions of individuals ascribing their symptoms to work were similar for NSPD (26.9 %) and exhaustion (27.5 %). The higher one's burnout score, the higher the likelihood of attributing one's burnout, NSPD, and exhaustion symptoms to work. Overall, burnout shared more variance with job variables than did NSPD and exhaustion. Coworker support, job security, and job autonomy constituted notable exceptions. In multiple regression analyses, seven of the 11 job variables predicted NSPD; five predicted burnout and exhaustion. An a posteriori analysis of a nationally balanced quota sample of 591 U.S. employees (48.2 % female) replicated our main finding—only 35.9 % of participants attributed their burnout symptoms to work. This study invites stakeholders to exercise more caution when making etiological inferences about burnout. Assuming that symptoms experienced at work are necessarily caused by work may hinder our ability to mitigate these symptoms. Our findings further question work-centric views of burnout.

Bianchi et al. 2025.

Journal of Psychosomatic Research, vol. 187.

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Keywords: Burnout; etiology; intervention; nonspecific psychological distress; treatment.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S002239992400374X?via%3Dihub>

Relieving anxiety and depression symptoms through promoting organizational identity and mitigating family-work conflict among medical professionals in digital leadership

Background: Digital leadership might be an innovative approach to decreasing the elevated rates of anxiety and depression symptoms among medical professionals, while also enhancing their psychological well-being. This emerging pathway may offer promising strategies to support the mental health of medical professionals. This study seeks to investigate the association among digital leadership, organizational identity, family-work conflict, and anxiety and depression symptoms, and further to uncover the underlying moderating mechanisms interplay. **Methods:** A cross-sectional online survey with 657 valid data were collected from four tertiary hospitals in Harbin, Heilongjiang Province, China, with a response rate of 69.3%. The statistical analysis was conducted employing IBM SPSS Statistics 22.0. Hierarchical regression analysis was performed to scrutinize the pertinent factors associated with anxiety and depression symptoms among medical professionals, while also evaluating the moderating influence of organizational identity and family-work conflict on the nexus among those. **Results:** The prevalence of anxiety and depression symptoms among medical professionals was 50.1%. Anxiety and depression symptoms were negatively correlated with digital leadership ($r = -0.278$, $p < 0.01$) and organizational identity ($r = -0.318$, $p < 0.01$), and positively correlated with family-work conflict ($r = 0.445$, $p < 0.01$). Organizational identity ($\beta = -0.938$, $p < 0.05$) and family-work conflict ($\beta = 0.698$, $p < 0.05$) moderate the relationship between digital leadership and anxiety and depression symptoms; The results of the simple slope analysis indicated that high organizational identity and low family-work conflict strengthened the effect of digital leadership on anxiety and depression symptoms among Chinese medical professionals. **Conclusions:** The prevalence of anxiety and depression symptoms among medical professionals was noted to be high. This study posits that strengthening digital leadership could apparently improve anxiety and depression symptoms among medical professionals. Moreover, it highlights the moderating role of organizational identity and family-work conflict in the relationship between digital leadership and anxiety and depression symptoms. These discoveries underscore the significance of implementing support and interventions to enhance the mental well-being of medical professionals, encompassing the cultivation of organizational identity, reduction of family-work conflict, and acknowledgment of the potential role of digital leadership in addressing mental health challenges.

Zhou et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: Anxiety and depression symptoms; digital leadership; family-work conflict; medical professionals; organizational identity.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20992-x>

Factors affecting healthcare workers burnout and their conceptual models: Scoping review

Background: The occupational stress that contributes to the development of burnout syndrome remains one of the greatest scientific challenges. Despite years of research into burnout and its determinants, burnout continues to attract the attention of researchers, and healthcare workers (HCWs) continue to experience burnout in large numbers. Burnout has a significant impact on both the mental and physical well-being of HCWs and reduces patient-centred healthcare. This review aims to identify the factors affecting healthcare workers' burnout (FAHCWB) and their conceptual models. **Methods:** The review was conducted according to Arksey and O'Malley's framework using Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA). Searches were conducted in PubMed, Scopus, Wiley, ProQuest, Sage, Science Direct, and EBSCO using the following keywords: healthcare professionals, burnout, and internal/external factors. Empirical, qualitative, quantitative, and mixed-design research articles published in English with full-text access in peer-reviewed journals that investigated the FAHCWB were included. For an in-depth analysis of the included articles, the authors developed a data synthesis table, and thematic analysis was applied to the analysis. **Results:** According to the inclusion criteria, 38 articles were selected for further data analysis. Six main themes were identified: (1) FAHCWB; (2) conceptual models of FAHCWB; (3) research tools for studying FAHCWB; (4) findings on FAHCWB in the context of different models; (5)

differences between findings from different models; (6) what is known and not known about FAHCWB. The results of the review show that most researchers conduct research on factors affecting burnout (FAB) based on factors related to the work environment, with fewer studies based on individual factors, including personality factors. Most of the research is based on the model developed by Maslach et al. The Maslach Burnout Inventory (MBI) has been used in most studies. **Conclusions:** Despite years of research, burnout continues to evolve rapidly, indicating that scientific research needs to be re-focused. Research should be conducted using different conceptual models and new research tools that allow the syndrome to be studied from a multidimensional perspective, including both the work environment and individual factors.

Nagle et al. 2025.

BMC Psychology, vol. 12, no. 1.

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Keywords: Burnout Factors; conceptual models; healthcare workers; professional stress.

Evidence Level: 1A

Link: <https://bmcpyschology.biomedcentral.com/articles/10.1186/s40359-024-02130-9>

Running on empty: Ontario Hospital workers' mental health and well-being deteriorating under austerity-driven system

The well-being of health care workers (HCWs) and the public in Ontario, Canada is at risk as the province's health care system is strained by neoliberal restructuring and an aging population. Deteriorating working conditions that preceded the COVID-19 pandemic further declined as the added challenges took their toll on the work force, physically and mentally. The pandemic-weary hospital staff, predominantly women, many racialized, are facing unprecedented challenges. They are experiencing stress, anxiety, and burnout from staffing shortages and the resulting increased workloads, long hours, and violence. Comprehensive telephone interviews were conducted with 26 HCWs from less highly paid occupations in a range of hospitals across the province. Thematic analysis reveals a critical need for policies and legislation ensuring increased funding, hospital capacity, and reduced wait times while providing HCWs with fair and equitable wages, increased staffing, mental health supports, greater respect and acknowledgment, and strong protections from violence and other workplace hazards.

Brophy et al. 2025.

New Solutions, vol. 34, no. 3.

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Keywords: Conditions of work; health care workers; mental health; neoliberalism.

Evidence Level: 5B

Link: <https://pubmed.ncbi.nlm.nih.gov/39113552/>

Reducing the number of intrusive memories of work-related traumatic events in frontline health care staff during the COVID-19 pandemic: Case series

Background: Frontline health care staff are frequently exposed to traumatic events as part of their work. Although this study commenced before the emergence of COVID-19, levels of exposure were heightened by the pandemic. Many health care staff members report intrusive memories of such events, which can elicit distress, affect functioning, and be associated with posttraumatic stress disorder symptoms in the long term. We need evidence-based interventions that are brief, preventative, non-stigmatizing, suitable for the working lives of frontline health care staff, and effective for repeated trauma exposure. A brief, guided imagery-competing task intervention involving a trauma reminder cue and Tetris gameplay may hold promise in this regard, given evidence that it can prevent and reduce the number of intrusive memories following trauma across various settings. **Objective:** This case series aims to investigate the impact of a brief imagery-competing task intervention on the number of intrusive memories, general functioning, and symptoms of posttraumatic stress, anxiety, and depression, and examine the feasibility and acceptability of the intervention for UK National Health Service frontline health care staff. The intervention was delivered with guidance from a clinical psychologist. **Methods:** We recruited 12 clinical staff from the UK National Health Service, specifically from emergency departments, the intensive care unit, and the ambulance service. We evaluated the intervention using an AB single-case experimental

design, where the baseline (A) was the monitoring-only phase and the postintervention (B) period was the time after the intervention was first administered. Methods were adapted once the COVID-19 pandemic began. **Results:** There was a decrease (59%) in the mean number of intrusive memories per day from baseline (mean 1.29, SD 0.94) to postintervention (mean 0.54, SD 0.51). There was a statistically significant reduction in the number of intrusive memories from baseline to postintervention, as shown by an aggregated omnibus analysis with a small effect size (τ -U=-0.38; $P<.001$). Depression, anxiety, and posttraumatic stress symptoms all significantly reduced from preintervention to postintervention. Participants also reported improvements in functioning based on both quantitative and qualitative measures. The intervention was feasible to deliver and rated as acceptable by participants.

Conclusions: These preliminary findings suggest that this brief therapist-guided imagery-competing task intervention offers a potential approach to mitigating the impact of work-related traumatic events in frontline health care staff, both during a pandemic and beyond. Randomized controlled trials will be an important next step.

Kubickova et al. 2025.

JMIR Human Factors, vol. 11.

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Keywords: COVID-19; case series; digital intervention; health care staff; intrusive memories; psychological trauma; remote delivery.

Evidence Level: 5B

Link: <https://humanfactors.jmir.org/2024/1/e55562>

Diagnosis and treatment of occupational burnout in the Swiss outpatient sector: A national survey of healthcare professionals' attributes and attitudes

We aimed to describe the attributes and attitudes of Swiss health professionals who treat persons with occupational burnout (POB) in the outpatient sector and explore associated determinants. The study design was descriptive cross-sectional survey, distributed to the 16,883 general practitioners (GP), psychiatrist-psychotherapists (PP), occupational physicians (OP) and psychologists registered in the Swiss Medical Association, the Swiss Federation of Psychologists, and other specialized associations. Using an online questionnaire, we identified professionals who consult and treat POB, their attributes, volume of POB consultations, diagnostics and treatment modalities and outcomes (OB severity, average proportion of POB who returned to work and who relapsed). Multinomial regression analysis was conducted to identify attributes associated with these outcomes. Among 3216 respondents, 2951 reported to consult POB, and 1130 (713 physicians and 410 psychologists) to treat them. POB consultations constitute 5 to 25% of professionals' consultations, which varies across professionals' specialties and specializations and geographic regions. The profile of POB consulted also differs across professionals. Work psychologists reported more often consulting POB at early OB stage, GPs mostly reported having patients with moderate OB, while PPs reported having the largest proportion of patients with severe OB. The treatment practices depend on OB severity but neither latter nor former was associated with the proportion of relapsed POB or POB who return to work. Physicians with waiting time >3 months reported more often having a higher proportion of relapsed patients. Since the study had an exploratory nature using a cross-sectional survey design and aggregated outcomes, these findings should be considered as first descriptive data, motivating further research.

Guseva Canu et al. 2025.

PLoS One, vol. 19, no. 12.

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Keywords: Occupational burnout; burnout; outpatient sector; healthcare professionals.

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0294834>

Suicidal ideation and thoughts of self-harm during the COVID-19 pandemic among Swedish employees: A cohort study on the role of job instability and job insecurity

Background: Suicidal ideation may be a warning sign for suicide and previous work has indicated a higher prevalence of suicidal ideation during the COVID-19 pandemic. Job loss and job insecurity are potential risk

factors for suicidal ideation, but their importance during the pandemic, and the role of organizational changes for suicidal ideation, is unclear. This study examined the association between various experiences associated with job loss and job insecurity during the pandemic and thoughts of suicide/self-harm in Sweden. **Methods:** The study sample was drawn from the Swedish Longitudinal Occupational Survey of Health (SLOSH). Auxiliary data collections in February 2021 and 2022 assessed exposure to job loss/unemployment, furlough, workplace downsizing, or increased job insecurity versus stable employment and thoughts of suicide or self-harm (PHQ-9) during the pandemic. The analyses were based on 1558 individuals (2 349 observations) participating in either or both waves and who had been working before the pandemic. Logistic regression models with cluster-robust standard errors were fitted, including sociodemographic factors and prior mental health problems to control for potential confounding. Measures of personality based on a brief version of the Big-Five personality inventory were also added. **Results:** The results indicated an association between all experiences, except furlough, and thoughts of suicide/self-harm, when adjusting for sex, age, civil status, socioeconomic status and prior mental health (job loss odds ratio (OR) = 3.70, 95% confidence interval (CI) 1.79-7.63, downsizing OR = 2.41, CI 1.24-4.70, job insecurity OR = 2.77, CI 1.15-6.67). The associations for job loss and insecurity were attenuated by adjustment for personality, although it remained statistically significant for downsizing. **Conclusions:** The results suggested a higher risk of suicidal ideation connected with loss of employment and survival of a downsizing, but not a forced reduction in working times/pay during the COVID-19 pandemic. The association for subjective job insecurity was less robust and may be partly explained by personality.

Blomqvist et al. 2025.

BMC Psychology, vol. 12, no. 1.

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Keywords: COVID-19; employment insecurity; organizational change; restructuring; staff reduction; suicidality.

Evidence Level: 4B

Link: <https://bmcpyschology.biomedcentral.com/articles/10.1186/s40359-024-02131-8>

Relationships between emotional labour, job burnout, and emotional intelligence: An analysis combining meta-analysis and structural equation modelling

The present study adopted a meta-analysis design that incorporated structural equation modelling to explore the relationships between emotional labour (EL), job burnout (JB), and emotional intelligence (EI), and enable model validation. The results revealed that EL and JB were significantly and positively correlated, that EI was significantly and positively correlated with EL, and that EI was significantly and negatively correlated with JB. The SEM parameter estimation values were all positive, reaching the level of significance and meeting the basic fit criteria. The total effect size of EL on JB was 0.289, which was equal to the sum of the direct and indirect effect sizes (0.371-0.082). This result indicated that EL affected JB through EI, validating the presence of a moderating effect. Finally, the results were discussed, and practical suggestions were proposed.

Chen et al. 2025.

BMC Psychology, vol. 12, no. 1.

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Keywords: Emotional intelligence; emotional labor; job burnout; meta-analysis; structural equation modeling.

Evidence Level: 1B

Link: <https://bmcpyschology.biomedcentral.com/articles/10.1186/s40359-024-02167-w>

Operational mental health... what practitioners and commanders should know

Background: Mental Health support to military operations is well established as an integral part of military medicine. Unfortunately, Commanders often receive little or no training in how best to use their mental health assets or what their capabilities are. Conversely, members of a Field Mental Health Team frequently have no operational experience and try to merely translate their civilian practice onto the battlefield.

Aim: This article describes what mental health professional can and should do on military deployments and calls for greater training and awareness of both Mental Health professionals and Operational Commanders

to foster mutual understanding and use the Field Mental Health Team to best effect. **Method:** The paper draws on the experience of working in a Field Mental Health Team on six operational deployments in Iraq and Afghanistan. **Results:** Military mental health professionals work mostly in peacetime and this work ill prepares them for the very different type of work required of them on operations. **Conclusion:** More training is required to prepare both practitioners and commanders for the mental health issues that confront them on operational deployments.

Deahl 2025.

International Journal of Social Psychiatry, vol. 70, no. 7.

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Keywords: Field mental health team; military mental health; military medicine; occupational psychiatry.

Evidence Level: 6B

Link: <https://pmc.ncbi.nlm.nih.gov/articles/PMC11528978/>

A longitudinal analysis of the impact of multidimensional precarious employment on the mental health of men and women

This study aimed to investigate the effect of precarious employment (PE) on the mental health of Australians. Building on previous research, we conceptualised PE as a multidimensional construct, accounted for gender differences in the associations, and our modelling strategy addressed the possibility of reverse causality bias. Data was pooled panel data from 15 waves (2005-2019) of the HILDA survey (n = 14,237). Using PCA, we created two multidimensional measures of PE: objective and subjective. Fixed effects (FE) regression models (attending to unmeasured time-invariant confounders) estimated the change in mental health associated with a change in PE, and instrumental variable (IV) analyses (addressing endogeneity bias) obtained an unbiased estimate of effect of subjective PE on mental health (with ordinary least squares (OLS) models as baseline). For both genders, FE models showed that objective and subjective multidimensional PE both had a strong negative association with mental health (stronger for subjective PE). IV analysis indicated OLS models overestimate the relationship between subjective PE and mental health for men but underestimate it for women, providing causal evidence that subjective PE is important for women's mental health. Overall, findings suggest that targeted PE policies have the potential to provide significant population mental health gains, particularly for working women.

Ervin et al. 2025.

Scientific Reports, vol. 14, no. 1.

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Keywords: Depression; employment precarity; gender; HILDA; job insecurity.

Evidence Level: 4B

Link: <https://www.nature.com/articles/s41598-024-78843-z>

Bullying, Harassment and Occupational Violence

Hear, hear! A review of accent discrimination at work

Research on diversity in organizations has mostly focused on attributes that rely on visual cues (e.g., gender, race, age) and overlooked an important source of difference that relies on auditory cues - accents. However, workers with non-standard accents (i.e., non-native accents, regional accents) often experience discrimination and negative outcomes at work. We first review prior accent research suggesting that these negative effects can be explained by stereotypes/stigmatization or lower processing fluency. We then identify three emerging topic areas and suggest future research directions in each domain: intersectionality, organizational language policies and practices, and investigation of a greater range of accents and languages.

Hideg et al. 2025.

Current Opinion in Psychology, vol. 60.

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Keywords: Accents; discrimination; processing fluency; stereotypes; stigmatization.

Evidence Level: 6A

Link: [https://linkinghub.elsevier.com/retrieve/pii/S2352-250X\(24\)00119-2](https://linkinghub.elsevier.com/retrieve/pii/S2352-250X(24)00119-2)

Role of turnover, downsizing, overtime and night shifts on workplace violence against healthcare workers: A seven-year ecological study

Background: About one-third of workers identify organisational factors as contributors to workplace violence (WPV), but the associations between these factors and WPV have primarily been explored retrospectively and with measures of perceived organisational constraints, hence providing limited information for prevention. Therefore, we assessed whether objectively measured ward-level indicators of turnover, downsizing, overtime, and night shifts are associated with the occurrence of WPV and whether these associations vary by ward type. **Methods:** We conducted an ecological study at a university hospital in northern Italy from 2016 to 2022, using wards as statistical unit (average: 230 wards per year). Active surveillance of WPV was based on an in-hospital incident reporting procedure, updated in November 2021 based on Health Regional Administration guidelines; 2021 was therefore excluded as a transition year. Individual-level administrative data were used to compute ward-level yearly indicators of turnover, downsizing, overtime and night shifts per active worker. Using generalised linear models, we estimated rate ratios (RRs) for yearly WPV counts per 1 SD increase in the indicators, controlling for study period, ward type (emergency department [ED], psychiatric ward, other) and ward sociodemographic composition. **Results:** A total of 337 WPV episodes occurred in the 1381 ward-year observations. The WPV rates per 100 active workers per year increased from 1.40 (95%CI: 1.23-1.60) during 2016-2020 to 3.48 (2.90-4.17) in 2022. Higher turnover (RR, 95%CI: 1.47, 1.23-1.75) and downsizing (1.12, 1.00-1.24) were associated with a greater occurrence of WPV across all wards; these associations were consistent across the study periods. In wards with night shift scheduling, turnover (1.64, 1.40-1.92), downsizing (1.21, 1.04-1.40) and the mean number of night shifts (2.50, 1.37-4.56) were associated with WPV. The association between night shifts and WPV was greater in psychiatric wards (RR = 8.73; interaction p-value = 0.02), whereas the role of downsizing was greater in EDs (RR = 1.42, interaction p-value = 0.09) and the role of turnover was greater in the other wards (RR = 1.34, interaction p-value = 0.16). **Conclusion:** Work organisational factors are associated with the occurrence of WPV episodes against healthcare workers. Ward type-tailored priorities should be given to minimising turnover and downsizing and promoting a fairer allocation of night shifts to decrease WPV occurrence.

Giusti et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: Health personnel; night shift work; personnel downsizing; personnel turnover; workload; workplace violence.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20898-8>

Determinants of workplace incivility and violence faced by female doctors in medical institutions

Objectives: To assess the frequency of workplace gender-based violence and incivility faced by female doctors. **Methods:** The analytical, cross-sectional study was conducted from June 10 to August 31, 2023, in Lahore, Pakistan, and comprised female doctors working in 1 public and 1 private medical institution in Lahore. Data was collected using a questionnaire. Workplace incivility and various demographic factors were compared. Data was analysed using SPSS 21. **Results:** Of the 200 subjects, 138(69%) were from the private sector and 62(31%) were from the public sector. The majority was aged <30 years 95(47.5%). Some form of workplace violence was faced by 86(43%) doctors; psychological violence by 58(29%), verbal 56(28%), digital harassment 11(5.5%) and physical violence 2(1%). Supervisor incivility was faced by 94(47%) respondents, while 87(43.5%) faced co-worker incivility over the preceding year. Supervisor incivility was significantly higher in private institutions and those having income less than Rs100,000 per month (p<0.05). **Conclusions:** Workplace gender-based violence and incivility faced by working female doctors was found to be high. The most common forms faced were psychological and verbal violence. Supervisor incivility faced by female doctors at workplace was significantly higher in private institutions and those having monthly income less than Rs100,000.

Nasir et al. 2025.

Journal of the Pakistan Medical Association, vol. 74, no. 11.

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Keywords: Workplace incivility, Gender-based violence, Medical Institutions..

Evidence Level: 4B

Link: https://jpma.org.pk/index.php/public_html/article/view/10835

Workplace sexual harassment: A qualitative study of the self-labelling process among employees in Denmark

Purpose: To explore how employees understand work-related sexual harassment and label their experience. **Methods:** This study is based on 13 semi-structured in-depth interviews with employees exposed to workplace sexual harassment. We analysed the data using a thematic approach drawing on frameworks of sensemaking in organizations. **Results:** We identified four major themes. The first two themes, distinguishing between sexual harassment and unwanted sexual attention and labelling real life sexual harassment, outline the interviewees' definitions of the two terms "sexual harassment" and "unwanted sexual harassment" and reveal the challenges of labelling sexually harassing behaviours at work. The last two themes; making the connection and negotiating boundaries and labels, explain the sensemaking process, i.e., how the interviewees come to understand and label their experience.

Conclusion: The analysis showed that the interviewees related sexual harassment with physical, coercive, and intentional behaviours, whereas unwanted sexual attention was seen as less severe and less intentional. The interviewees often doubted how to label their experience, and making sense of one's experience could take years. Self-labelling is inherently a social process, and the validation and rejection of others play an important role. Finally, the #MeToo movement constituted a turning point for several interviewees' understandings of events.

Nielsen et al. 2025.

International Journal of Qualitative Studies on Health and Well-being, vol. 19, no. 1.

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Keywords: Work; qualitative study; self-labelling; sense-making; sexual harassment.

Evidence Level: 5B

Link:

[https://www.tandfonline.com/doi/full/10.1080/17482631.2024.2324990#:~:text=These%20studies%20show%20that%20employees,Magley%20%26%20Shupe%2C%202005\)%2C](https://www.tandfonline.com/doi/full/10.1080/17482631.2024.2324990#:~:text=These%20studies%20show%20that%20employees,Magley%20%26%20Shupe%2C%202005)%2C)

The extent of physical and psychological workplace violence experienced by prehospital personnel in Denmark: A survey

Background: Workplace violence against healthcare workers has been a well-known problem for more than 40 years. This problem is also relevant for prehospital personnel who are at risk of physical and/or psychological violence during work. Violence and threats of violence can have physical and psychological consequences, including personal challenges in their everyday life, use of sick days, reports, and the need for professional help. Therefore, this study aimed to describe the extent of and subsequent reporting of physical and psychological workplace violence toward the prehospital healthcare workers in Denmark in a two-year period. Moreover, we wanted to elucidate any possible effect of workplace violence on the private and professional lives of the prehospital healthcare personnel. **Methods:** A nation-wide survey where a validated anonymised questionnaire was directed to all of the approximately 4500 Danish prehospital healthcare workers. **Results:** Out of 584 complete responses we found that 47.4% had experienced psychological violence on the job whereas 25.7% had experienced physical violence on the job within the past two years. The perpetrators were mainly patients or relatives of the patients. Physical violence was mostly reported as punching, pushing, and kicking, while psychological violence included threats of violence and other intimidation. After experiencing violence, the respondents reported both physical and psychological harm, which for some prehospital healthcare workers had consequences for their professional and/or personal life. Furthermore, some prehospital healthcare workers reported that the violence had resulted in some patients receiving worse treatment afterwards. We found that violence was rarely reported to either employers or the police, because respondents believed the events were not

important enough to merit reporting, or because a report was not considered to make any difference to the healthcare worker. The survey demonstrates that, as a minimum, at least one healthcare worker in 30 and one healthcare worker in 16 has been exposed to episodes of violence and threats of violence within the last two years. **Conclusion:** We suggest that the prehospital organisations emphasise reporting future episodes of physical and/or psychological violence. Knowing the extent of the problem is a prerequisite for addressing, debriefing, and/or other psychological follow-up.

Schøsler et al. 2025.

Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine, vol. 32, no. 1.

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Keywords: Prehospital exposure to violence; prehospital harassment; prehospital work environment; survey.

Evidence Level: 4B

Link: <https://sjtrem.biomedcentral.com/articles/10.1186/s13049-024-01311-0>

Psychosocial Issues

Gender-specific perception of job stressors and resources: A structural equation model-based secondary analysis

Objective: Stress is an extensive issue in modern society, affecting men and women differently. A better understanding of these patterns is required within the work context. Therefore, this study aimed to identify gender differences in the effects of stressors (quantitative demands, qualitative demands, working time) and resources (job control, quality of leadership, co-worker support) on subjective perceived stress across occupational groups. **Methods:** This study was conducted as a secondary data analysis based on the 'German Study on Mental Health at Work' data. The national representative cross-sectional sample included 4,118 employees. The data were analysed using structural equation modelling.

Results: Correlations between quantitative demands, working time, co-worker support, quality of leadership, job control, and subjective perceived stress were first confirmed for a total sample of employees. Gender differences in these interactions were then analysed using multi-group equation modelling and a gender-stratified sample. Men and women showed an increase in subjective perceived stress for high quantitative demands. This increase was more prominent for men. Women further showed an increase in subjective perceived stress in response to long working time. High co-worker support, quality of leadership, and job control had stress-reducing effects but did not result in significant gender differences. No association was found between qualitative demands and subjective perceived stress.

Conclusion: The results underline that not all working conditions significantly impact stress for both genders and gender differences exist only within the stressors. Hence, gendered strategies may only be required in some constellations. However, specific contexts require integrating gendered approaches in research and operational practice.

Heub et al. 2025.

Frontiers in Public Health, vol. 12.

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Keywords: Co-worker support; gender; job demands; job resources; leadership; stress; work; work time.

Evidence Level: 4B

Link: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2024.1463868/full>

Work-related stress among financial professionals: The impact of age, work experience and education

Objective: The aim of this study was to investigate the differences in the level and sources of work-related stress among financial professionals regarding age, work experience, and educational level. **Methods:** A cross-sectional research design was employed among 702 financial professionals in Kazakhstan who worked in different corporate and government organizations. Data on work-related stress were collected via online questionnaires using the Job Stress Survey (JSS). **Results:** The results showed that young financial professionals experienced higher stress than older professionals due to the lack of opportunity for advancement. Moreover, the study findings revealed that less experienced financial professionals reported

higher levels of stress than more experienced professionals due to the meeting deadlines and conflicts with other departments. The study also found that financial professionals with a postgraduate degree stressed more than professionals with an undergraduate degree on major JSS scales. Furthermore, financial professionals with a postgraduate degree experienced higher stress due to the assignment of disagreeable duties, working overtime, lack of opportunity for advancement, inadequate support by supervisor, dealing with crisis situations, lack of recognition for good work, difficulty getting along with supervisor, insufficient personnel to adequately handle an assignment, lack of participation in policy-making decisions, inadequate salary, excessive paperwork, and covering work for another employee than professionals with undergraduate and vocational degrees. **Conclusion:** The findings of this study provide valuable insights for organizations to eliminate and alleviate work-related stress.

Kutebayev et al. 2025.

PLoS One, vol. 19, no. 11.

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Keywords: Work-related stress; financial professionals; education; age.

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0314169>

Psychosocial workplace safety in mental health services: Commentary and considerations to improve safety

Objectives: Psychosocially unsafe workplaces are related to burnout, especially amongst trainees and psychiatrists. Burgeoning research on psychosocial workplace safety indicates the importance of organisational governance to reduce adverse professional, and consequently patient, outcomes in healthcare by balancing job demands and resources. We provide a brief commentary on the relevance of the concept of the Psychosocial Safety Climate model for mental health services and healthcare workers, and considerations for action. **Conclusions:** Based on the Extended Job Demand-Resource model, the Psychosocial Safety Climate model has been developed and validated in community and healthcare environments. Psychosocial safety is also an Australian workplace safety requirement. An important direction to improve working conditions, reduce adverse outcomes, and improve recruitment and retention of healthcare workers, may be to adopt and formalise psychosocial workplace safety as a key performance indicator of equal importance to productivity for mental healthcare services.

Looi et al. 2025.

Australasian Psychiatry, vol. 32, no. 6.

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Keywords: Psychosocial safety climate; healthcare workers; job demand-resource model; key performance indicator; psychological health.

Evidence Level: 6A

Link: <https://pubmed.ncbi.nlm.nih.gov/39265991/>

Mothers balancing work and family: The associations with emotional well-being, sleep-wake problems and the role of basic needs

Background: The transition to motherhood involves significant changes, extending from pregnancy to the early years of a child's life. This period, characterized by multiple stressors and adjustments, can profoundly impact maternal well-being. For this reason, the aim of this study was to investigate the associations between work-family balance, need satisfaction, depression, anger, vitality and sleep-wake problems, using Self-determination Theory (SDT) as a theoretical framework. **Methods:** Participated in this study 218 working mothers in Italy with children aged between 1 and 36 months. Using a correlational design, SEM with latent variables was used to test an integrative model. **Results:** Results revealed significant positive associations between work-family balance and need satisfaction, and vitality, and negative direct associations of need satisfaction with sleep-wake problems, depression, and anger. Indirect associations were also visible between work-family balance and psychological outcomes through need satisfaction. **Conclusions:** Overall, findings underscore the importance of conditions that support the satisfaction autonomy, competence, and relatedness of working mothers during this critical life stage. These insights

have implications for organizational policies and interventions aimed at supporting the mental health of working mothers.

Olivieri et al. 2025.

BMC Psychology vol. 12, no. 1.

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Keywords: Basic needs; sleep–wake problems; work-family balance; working mothers.

Evidence Level: 5B

Link: <https://bmcpyschology.biomedcentral.com/articles/10.1186/s40359-024-02241-3>

How work engagement and workaholism relate to individuals' and their intimate partners' mental well-being: A test of the spillover-crossover model among Indonesian dual-earner couples

This study investigated the relationship between work engagement, workaholism, and mental well-being of individuals and their intimate partners. This association was explored in the context of Indonesian dual-earner couples, using the Spillover-Crossover Model (SCM). The study examined how work-to-family spillover (i.e. work-to-family conflict and facilitation) and recovery experiences (i.e. psychological detachment, relaxation, mastery, and control) mediate these relationships. A cross-sectional survey was conducted among 186 Indonesian dual-earner couples with preschool children. Structural equation modeling was used to test the hypothesized model and bootstrap method was conducted to evaluate the indirect relationships. As hypothesized, among male and female workers, work engagement was positively related to individual's mental well-being through work-to-family facilitation and recovery experiences. In contrast, workaholism was negatively related to individual's mental well-being through work-to-family conflict and recovery experiences excluding psychological detachment. Individual's mental well-being, in turn, was positively related to intimate partner's mental well-being. These findings suggested that work engagement and workaholism were related to intimate partner's mental well-being differently. These results further supported the SCM, suggesting that higher work engagement could increase workers' and their intimate partners' mental well-being through work-to-family facilitation and their recovery experiences, while workaholism acts oppositely.

Hamsyah et al. 2025.

Industrial Health, vol. 62, no. 6.

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Keywords: Mental well-being; spillover-crossover model; work engagement; work-family balance; workaholism.

Evidence Level: 4B

Link: https://www.istage.jst.go.jp/article/indhealth/62/6/62_2024-0094/article

Effort-reward imbalance at work assessed at midlife and prediabetes prevalence assessed 18 years later in a prospective cohort of white-collar workers

Objectives: Evidence suggests that workers exposed to psychosocial stressors at work from the effort-reward imbalance (ERI) model are at increased risk for type 2 diabetes mellitus (T2DM). However, evidence about the effect of ERI on prediabetes is scarce. This study aimed to examine the association between effort-reward imbalance at work, glycated haemoglobin level and the prevalence of prediabetes in women and men from a prospective cohort study. **Methods:** This study was conducted among 1354 white-collar workers followed for an average of 18 years. Effort-reward imbalance at work was measured in 1999 to 2001 using a validated instrument. Glycated haemoglobin was assessed at follow-up (2015 to 2018). Differences in mean glycated haemoglobin levels were estimated with linear models. Prediabetes prevalence ratios (PRs) were computed using robust Poisson regression models. **Results:** In women, those exposed to effort-reward imbalance at work at baseline had a higher prevalence of prediabetes (PR = 1.60, 95% confidence interval: 1.02-2.49) at follow-up following adjustment for sociodemographic, lifestyle-related, clinical, and other occupational risk factors. There was no difference in mean glycated haemoglobin levels. **Conclusion:** Among women, effort-reward imbalance at work at midlife was associated with the

prevalence of prediabetes, at older age. Preventive workplace interventions aiming to reduce the prevalence of effort-reward imbalance at work may be effective to reduce the prevalence of prediabetes among women.

Riopel et al. 2025.

Annals of Work Exposures and Health, vol. 68, no. 9.

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Keywords: HbA1c; effort-reward imbalance; prediabetes; psychosocial stressors at work; type 2 diabetes mellitus.

Evidence Level: 4A

Link: <https://pmc.ncbi.nlm.nih.gov/articles/PMC11586276/>

The impact of job fitness on depressive symptoms in Korean middle-aged and older population: A longitudinal study

Purpose: This study aimed to determine the impact of job fitness on depression and depressive symptoms in Korean middle-aged and older population. **Methods:** We collected data from the Korean Longitudinal Study of Aging (KLoSA), and performed a longitudinal analysis on 3,185 individuals with jobs at baseline. The dependent variable, depressive symptoms was measured by CES-D10 score, and the main variable of interest, job fitness was classified into nine groups according to job satisfaction and education level. To determine whether the estimate of depressive symptoms over the past week and depression changed over time, we applied the Generalized Estimating Equation (GEE) model. **Results:** In the fully adjusted model, the impact of job fitness on depression and depressive symptoms was statistically significant. Compared to those with a suitable job level and a medium educational level, those with a large gap between job and educational levels were more likely to develop depression and depressive symptoms. It was also found that satisfaction with job content was a crucial factor affecting depression in the middle-aged and older adults. **Conclusion:** Our findings demonstrated that job fitness significantly influenced depression, even after accounting for the effect of job satisfaction caused by a mismatch in job-education fitness. Since work demands and responsibility are difficult to quantify or qualify, job-education fitness could serve as a valuable tool to predict the extent of depression deterioration in individuals.

Yun et al. 2025.

Frontiers of Public Health, vol. 12.

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Keywords: CES-D; depression; depressive symptoms; educational level; job fitness; job level.

Evidence Level: 4B

Link: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2024.1439058/full>

Lessons from a crisis: occupational stress in healthcare workers in an acute paediatric teaching hospital in Ireland

Background: The COVID-19 pandemic placed increased pressure on service provision and healthcare worker (HCW) wellness. As the crisis of the pandemic receded, paediatric healthcare staff required an appropriate response to facilitate individual and organisational recovery, to minimise long-term HCW burn-out and to be better equipped for future crisis in paediatric healthcare. **Objective:** To explore the experiences of HCWs working during the COVID-19 pandemic in an acute paediatric hospital to determine an appropriate leadership response in the postcrisis work environment. **Methods:** Qualitative research design using responses from open-ended questions from 133 clinical and non-clinical staff (89% clinical) from an Irish paediatric teaching hospital. Responses were thematically analysed. **Results:** Paediatric HCWs experienced frustration, uncertainty, anxiety and stress, during the pandemic crisis. Perceived organisational contributors included communication inconsistencies, inadequate support and resources, including staff shortages. This exposed remaining staff to high risk for long-term burn-out as the pandemic recedes. Three themes were developed detailing this: support, communication and trust. **Conclusion:** This research supports the long-standing need to increase mental health service investment and to implement an appropriate response to regain and maintain a healthy workforce, post-COVID-19. The organisational response should address the biopsychosocial needs of the individual and paediatric healthcare

organisations should work dynamically, creatively and collaboratively to ensure the psychological safety of their workforce.

Ward et al. 2025.

BMJ Paediatrics Open, vol. 8, no. 1.

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(<https://creativecommons.org/licenses/by-nc/4.0/>)

Keywords: COVID-19; health services research; psychology; qualitative research.

Evidence Level: 5B

Link: <https://bmjpaedsopen.bmj.com/content/8/1/e003018>

Long working hours, work-life imbalance, and poor mental health: A cross-sectional mediation analysis based on the sixth Korean working conditions survey, 2020-2021

Background: There has been growing concern about the negative mental health impact of long working hours and overwork. Our study examined how work-life imbalance (WLI) could be a mediator between working hours and poor mental well-being. **Methods:** We included 34,968 individuals from a nationwide cross-sectional survey in Korea. Self-reported working hours per week were collected, and mental health was assessed using the World Health Organization (WHO)-5 Well-Being Index. Counterfactual-based mediation models were employed to disentangle the total effects into a direct effect (work hour - poor mental health) and an indirect effect (work hour - WLI - poor mental health). **Results:** Out of 34,968 participants, 52.6% worked 35-40 hours/week, 20.0% worked 41-48 hours/week, 11.7% worked 49-54 hours/week, and 15.6% worked ≥ 55 hours/week. The odds ratios (ORs) of the total impact of working hours on poor mental health were 1.08 (95% confidence interval [CI], 1.01-1.16) for 41-48 hours/week, 1.28 (95% CI, 1.17-1.39) for 49-54 hours/week, and 1.60 (95% CI, 1.48-1.74) for ≥ 55 hours/week in comparison to 35-40 hours/week. The ORs of the indirect effects were 1.04 (95% CI, 1.03-1.05) for 41-48 hours/week, 1.08 (95% CI, 1.07-1.09) for 49-54 hours/week, and 1.14 (95% CI, 1.12-1.16) for ≥ 55 hours/week, accounting for 51%, 31%, and 28% of the total effects, respectively. **Conclusion:** Our findings suggest that WLI can partially mediate the association of long working hours with mental health deterioration. Policy efforts are required to mitigate the adverse mental health effects of overwork.

Baek et al. 2025.

Journal of Epidemiology, vol. 34, no. 11.

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Keywords: Depressive symptoms; overwork; well-being; work-family conflict; work-life spillover.

Evidence Level: 4B

Link: https://www.jstage.jst.go.jp/article/jea/34/11/34_JE20230302/article

Development of the process of determining essential hazardous psychosocial factors of employee stress risk

The purpose of the study is to determine the impact of hazardous psychosocial factors on stress among employees when performing production tasks to develop recommendations for reducing their impact. Based on the recommendations of the ISO 45003:2021 standard, a special questionnaire was developed to determine hazardous psychosocial factors that lead to the appearance of worker's stress, the answers to which were evaluated on a Likert scale with points from 0 to 4. 68 workers (23 men and 45 women) aged 20 to 45 took part in the survey conducted at industrial enterprises of the Dnipro region in May-June 2023. A questionnaire was developed to identify significant psychosocial hazardous factors in personnel at an industrial enterprise, which includes three groups of psychosocial hazardous factors and consists of thirty questions. A ten-step process for managing significant hazardous psychosocial risks is proposed. It was established that women pay more attention to challenges (psychosocial hazardous factors) that are associated with the organization of work (uncertainty at work, lack of breaks due to workload) and social problems (disrespect, disrespect and inattention to employees, unreasonable behavior towards you by leadership); for men, a significant group of hazardous psychosocial factors is-equipment, working environment, hazardous tasks (fear of performing hazardous work; work is associated with a significant risk

to life). The novelty consists in the justification of the process of identifying essential psychosocial factors, which will allow managers to systematically monitor the state of mental health of employees, the psychological climate in the organization and respond in a timely manner to expected problems and develop corrective actions to normalize the situation. The process of managing significant hazardous psychosocial risks has been developed, which consists of ten steps and differs from the known procedure of identifying significant hazardous psychosocial factors on a Likert scale, considering the answers of women and men.

Bazaluk et al. 2025.

Frontiers in Public Health, vol. 12.

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Keywords: Hazards; health; health psychosocial risk; psychosocial risk; social factors; stress; work organization.

Evidence Level: 5B

Link: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2024.1414695/full>

Flourishing and job satisfaction in employees working in UK clinical trial units: A national cross-sectional survey

Background: To evaluate healthcare interventions in clinical trials, it is crucial to attract and retain a skilled workforce. The job demands associated with developing and running clinical trials have been linked with difficulties in recruiting and retaining skilled Clinical Trial Unit (CTU) staff. Flourishing conceptualises positive aspects of wellbeing which may help staff to thrive within a demanding job role. This study explored the association between flourishing and job satisfaction among staff based in UK Clinical Research Collaboration (UKCRC)-registered CTUs. **Methods:** A national online survey of UKCRC-registered CTUs was conducted which combined psychometric measures of flourishing (eudaimonic workplace wellbeing scale) and job satisfaction (including measures of turnover intention and workplace engagement), alongside free-text questions. **Results:** Four hundred and eighty-four staff from 52 UKCRC CTUs completed the survey. Overall, participants reported 'average' levels of job satisfaction and work engagement, but there was evidence that CTU staff reported slightly lower levels of flourishing and moderate levels of turnover intention. Salary, role, and flexible working arrangements were associated with levels of flourishing. When these factors were controlled for, higher levels of flourishing were still predictive of job satisfaction and turnover, but not work engagement. Qualitative analysis of free text responses revealed that elements of the working environment, such as supportive relationships, flexible working, and development opportunities, can act as resources to help employees flourish in their jobs. **Conclusions:** Through exploring flourishing in CTU staff we identified factors which may help CTU employees thrive in their role, and in turn increase job satisfaction and commitment to their place of work. CTUs should consider the importance of developing a working environment which supports staff to feel valued, experience autonomy and supportive working relationships, as well as opportunities to develop and engage in meaningful work. Efforts to understand and protect the wellbeing of CTU staff are vital to attract and retain staff to design and conduct clinical trials. The learning from this may be applicable to other healthcare workforces facing a recruitment and retention crisis.

Hall et al. 2025.

BMC Health Services Research, vol. 24, no. 1.

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Keywords: Clinical trials; flourishing; job satisfaction; research staff; workplace wellbeing.

Evidence Level: 4B

Link: <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-024-11986-x>

On the nature, predictors, and outcomes of work passion profiles: A generalisability study across distinct types of employees

Thus far, little research has adopted a person-centred approach to investigate the nature of work passion profiles. As a result, our understanding of the most commonly occurring combinations of harmonious passion (HP) and obsessive passion (OP) in the workplace remains limited. To achieve a more refined understanding of the nature of these work passion profiles, our first aim was thus to identify the

configurations of HP and OP for work observed among five samples, including 11 subsamples, of employees (N = 7258). Then, we also considered the extent to which these profiles and their associations with theoretically-relevant predictors (work-home segmentation and organisational support) and outcomes (work engagement, work-family conflict, turnover intentions, presenteeism, and counterproductive work behaviours) generalised across all subsamples. We identified a total of five profiles with a structure that differed slightly across samples: High OP Dominant, High HP Dominant, Average HP Dominant, Low HP Dominant (i.e., low levels of passion dominated by higher levels of HP relative to OP), and Moderately Low Passion. The High OP Dominant profile was systematically the most prevalent (37.5%-54.1% of the sample), whereas the High HP Dominant was the least prevalent (2.1%-7.7%). Across all samples, work-home segmentation was related to a higher likelihood of membership into the profiles characterised by higher, relative to lower or moderate, levels of passion (HP and OP), whereas organisational support also helped employees to stay away from the High OP Dominant profile. Lastly, the least desirable outcomes were observed in the High OP Dominant profile, whereas the most desirable outcomes were observed in the High HP Dominant profile. Interestingly, work engagement levels were comparable in these two profiles. Beyond their theoretical implications for research on work passion, these results highlight how work passion has highly similar implications across contexts.

Gillet et al. 2025.

Stress and Health, vol. 40, no. 6.

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Keywords: Latent profile analyses; organisational support; person-centred approach; turnover; well-being; work passion; work-family balance.

Evidence Level: 4B

Link: <https://onlinelibrary.wiley.com/doi/10.1002/smi.3495>

Turnover intention among healthcare workers in Shenzhen, China: The mediating effect of job satisfaction and work engagement

Background: To ensure workforce stability in China's healthcare system and maintain high-quality care, it is essential to comprehensively understand the interplay of factors contributing to turnover intention of healthcare workers. This study aims to examine the associations between potential factors and turnover intention in healthcare workers and explore the mediating effect of job satisfaction and work engagement in the association between them. **Methods:** In this cross-sectional study, a random sample of 1060 healthcare workers working in 98 public medical institutions were recruited to rate their turnover intention in 2018 in Shenzhen, China. Information on socio-demographic characteristics, job-related factors, turnover intention, job satisfaction, work engagement, work stress and doctor-patient relationship of participants were collected. Pearson's chi-squared tests and binary logistic regression analyses were performed to explore the association between these factor and turnover intention. Mediation analysis was used to explore the roles of potential mediators and moderators. **Results:** The results showed that age (OR: 0.35, 95%CI: 0.16 to 0.72), tenure (OR: 0.98, 95%CI: 0.96 to 0.99), administrative positions (OR: 0.33, 95%CI: 0.16 to 0.63), and night shift frequency (OR: 1.84, 95%CI: 1.26 to 2.67) were significantly associated with turnover intention. We identified the mediating effect of job satisfaction and work engagement in the relationship between administrative positions and turnover intention, while the suppressing effect in the relationship between professional titles and turnover intention. Additionally, we found that monthly income plays a moderating role in the relationship between work engagement and turnover intention, and in the association between professional titles and turnover intention. **Conclusions:** Greater job satisfaction and engagement, along with reasonable remuneration, were found to be associated with lower turnover intention among healthcare workers. Employers should proactively monitor the dynamic interactions among these factors and then develop more tailored interventions in order to alleviate the ongoing loss of healthcare workers.

Xu et al. 2025.

BMC Health Services Research, vol. 24, no. 1.

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Keywords: Administrative positions; healthcare worker; job satisfaction; monthly income; professional titles; turnover intention; work engagement.

Evidence Level: 4B

Link: <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-024-11872-6>

Differential psychosocial consequences between male and female workers who have suffered an amputation in an occupational accident

Background: The main goals of this study are to determine the sociodemographic, occupational and psychosocial characteristics and type of amputation of people affected by occupational amputations in Navarre, Spain, and to analyse the differing characteristics based on sex. **Methods:** People affected by occupational amputations in Navarra between January 2000 and December 2019 were identified by the Public and Work Health Institute of Navarre. Sociodemographic, amputation, psychopathological (Symptom Checklist, SCL-90-R; Severity Posttraumatic Stress Disorder Scale-Revised, EGS-R), maladjustment (Maladjustment Scale), pain (Numeric Pain Rating Scale) and suicide (Columbia Scale Screening for Suicidal Ideation, C-SSRS) characteristics were assessed. **Results:** Of the 557 workers identified, 80 were included in the study. The results showed the presence of relevant psychosocial repercussions with a moderately high level of psychopathological symptoms, a Post-Traumatic Stress Disorder (PTSD) prevalence rate of 10%, re-experimentation as the most relevant symptom, and labour and leisure as the most affected areas. Sex differences were found in PTSD re-experimentation symptoms (higher in women) and leisure maladjustment (higher in men). No sex differences were found in the remaining variables studied. **Conclusions:** This study demonstrates the relevance of psychosocial consequences in workers with amputations. Research on this topic is necessary due to the scarcity of studies conducted to date.

Nevado et al. 2025.

Anales del Sistema Sanitario de Navarra, vol. 47, no. 3.

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Keywords: Psychosocial; male; female; amputation; occupational accident.

Evidence Level: 5B

Link: <https://recyt.fecyt.es/index.php/ASSN/article/view/107302/80623>

Fostering Work Participation

Return to Work

Understanding return to work after a cancer-related sickness absence: Perceptions of barriers and facilitators among all relevant stakeholders

Purpose: The aim of this study was to examine the themes acting as barriers or facilitators, from diagnosis and sickness absence (SA) to RTW and work retention, after a cancer-related SA from the perspectives of all stakeholders in the Spanish setting. **Methods:** Descriptive qualitative approach with a socio-constructivist perspective. Theoretical sampling was carried out until saturation. Six discussion groups (4-8 people/group) were conducted: three groups of people with a cancer-related SA in Catalonia (Spain), one with oncology care professionals, and two with company representatives. An additional individual interview was conducted with a primary care physician. The sessions were held virtually and were recorded, transcribed verbatim, and analyzed using thematic analysis and mixed coding. **Results:** Barriers to RTW and work retention detected by stakeholders included insufficient information and guidance on the impact of cancer on work and SA management, lack of general knowledge and recognition of side effects, lack of consideration of job tasks by medical tribunals, and working in precarious employment. Facilitators included workplace support, psycho-oncologists, patient associations, and working for a public company. **Conclusions:** Both work interruption due to an SA and RTW, are key moments for determining cancer survivors' work retention. We found a general perception of lack of involvement of the social security system, companies, and health professionals in Spain in the impact of cancer on work. **Implications for cancer survivors:** Integrating the work sphere in cancer care from the beginning of cancer treatment, and by all stakeholders, could facilitate successful future RTW.

Ayala-García et al. 2025.

Psycho-Oncology, vol. 33, no. 12.

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Keywords: Cancer; cancer survivors; employers; healthcare professionals; oncology; qualitative; return to work; sickness absence.

Evidence Level: 5B

Link: <https://onlinelibrary.wiley.com/doi/10.1002/pon.70036>

Predictors of return to work in people with major depression: Results from a supported employment program in Germany

Background: Depression is a common mental disorder and is associated with work disability. For the implementation of evidence-based interventions, such as Individual Placement and Support (IPS) for people with depression in Germany, the aim of this study was to investigate client variables that predict return to work. **Methods:** The sample consisted of 129 participants, initially treated in a psychiatric hospital due to major depression, who participated in IPS as part of a German clinical trial. Baseline demographic (age, sex, education, sickness absence days, employment status), psychiatric (symptom severity, comorbidity, general physical and mental health, disability), and neuropsychological (self-rated deficits, test performance) variables were included. Return to work within one year was predicted using separate and overall binary logistic regression analyses. **Results:** A total of 70 participants (56 %) returned to work within the one-year follow-up period. >100 days of sick leave in the year prior to study entry (vs. <100 days) and higher self-rated cognitive deficits were significantly associated with reduced odds of return to work within one year of IPS. **Limitations:** The sample consisted of participants with a relatively good work history who were assigned to IPS by the treatment team, thus, the generalizability of the results is limited.

Conclusions: People with depression who participate in IPS interventions might benefit from specifically targeting perceived cognitive deficits. Factors associated with prolonged sick leave due to depression and their role in return to work with IPS need further investigation.

Bergdolt et al. 2025.

Journal of Affective Disorders, vol. 364.

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Keywords: Depression; IPS; sick leave; supported employment; vocational rehabilitation; work.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0165032724011418?via%3Dihub>

Factors influencing the return to the professional activity in patients hospitalized for myocardial infarction: A single centre experience - pilot study

Background: Cardiovascular diseases, with myocardial infarction (MI) on the leading position, remain a serious health care issue and socio-economic burden. Nevertheless, factors influencing the return of patients to the professional activity are not fully understood. Cardiac rehabilitation may have a positive impact on the return to professional activity after MI. However, no study among participants in the comprehensive care after myocardial infarction (CCMI) model (in Polish: "KOS-zawał") evaluated this issue so far. The aim of the study was to evaluate factors influencing the return to work and duration of the sick leave after MI among patients who participated in the CCMI in a single reference cardiology centre in Poland. **Material and methods:** In total, 144 patients were screened retrospectively. Out of them, 105 were included in the analysis. All patients were treated with direct percutaneous coronary intervention according to current European Society of Cardiology guidelines and participated in cardiac rehabilitation within the CCMI program, therefore had been provided optimal and modern therapeutic approach. Data was collected based on patients' medical records and information furnished by the insurer. **Results:** Out of 105 patients analysed, 93 (88,6%) returned to work. A positive predictor of returning to work was male sex. Predictors of a prolonged return to work were older age and female sex. Completing rehabilitation,

anthropometric factors, biochemical factors or results of post-MI echocardiographic examination did not influence the return to professional activity. **Conclusions:** A relatively large percentage of patients after MI and in the CCMI program returns to professional activity. Main factors of prolonged sick leave are older age and female sex. *Med Pr Work Health Saf.* 2024;75(6):501-510.

Paluch et al. 2025.

Medycyna Pracy, vol. 75, no. 6.

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Keywords: Cardiac rehabilitation; myocardial infarction; professional activity; rehabilitation; return to work; sick leave.

Evidence Level: 4B

Link: <https://medpr.imp.lodz.pl/Factors-influencing-the-return-to-the-professional-activity-in-patients-hospitalized,195910,0,2.html>

Work participation after receiving multidisciplinary treatment or acceptance and commitment therapy intervention for return to work: Long-term follow-up of a randomized controlled trial among sick-listed individuals with mental disorders and/or chronic pain

Background: The return-to-work (RTW) process for individuals on long-term sick leave can be complex. Vocational rehabilitation may facilitate RTW; however, many intervention studies often have relatively short follow-up periods. The purpose of this study was to assess long-term work participation 2-7 years after the initiation of a three-armed randomized controlled trial aimed at RTW for individuals on long-term sick leave because of mental disorders and/or chronic pain. **Methods:** This study followed 220 participants out of 402 (response rate 55%, 205 female) who had previously participated in a randomized controlled trial. They were allocated to one of three groups: multidisciplinary team assessment and individualized treatment (MDT), acceptance and commitment therapy (ACT) or a control group. The participants were followed up at two, three, four, five, six, and seven years after inclusion. The outcome, work participation, was assessed using registry data and defined as having the main source of annual income from paid work during the follow-up years. **Results:** Participants in the MDT intervention group were, to a larger extent, in paid work during follow-up in years four (9.0% points), five (2.5% points), six (7.6% points), and seven (4.1% points) after inclusion, compared to the control group. Participants in the ACT intervention group were, to a larger extent, in paid work during follow-up in years four (14.8% points), six (17.6% points), and seven (13.9% points) after inclusion, compared to the control group. **Conclusion:** This study, primarily involving female individuals on long-term sick leave, suggests that both MDT and ACT interventions can improve long-term work participation. The results also indicate some time-lag effect of the interventions.

Berglund et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: Chronic pain; mental disorders; multidisciplinary rehabilitation; return to work; sick leave; vocational rehabilitation.

Evidence Level: 3B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-21116-1>

Ethical challenges from a problem-solving intervention with workplace involvement: A qualitative study among employees with common mental disorders, first-line managers, and rehabilitation coordinators

Purpose: This study aims to explore ethical challenges potentially arising from a problem-solving intervention with workplace involvement (PSI-WPI) in primary health care (with first-line manager involvement) for employees on sickness absence due to common mental disorders. **Methods:** A qualitative design guided by the theoretical framework for systematic identification of ethical aspects of healthcare technologies. Semi-structured interviews were performed with coordinators ($n = 6$), employees ($n = 13$), and first-line managers ($n = 8$). Reflexive thematic analysis was used to analyse and interpret themes.

Results: A main theme was identified "the workplace and healthcare hold different organizational value logics" and four sub-themes: "the PSI-WPI challenged the organizational goals and values of the workplace and healthcare", "the PSI-WPI challenged organizational values on fairness", "the PSI-WPI challenged the professional roles of first-line managers and rehabilitation coordinators" and "the PSI-WPI introduced a

need for the employee to juggle the employee and patient roles". **Conclusion:** Different organizational value logics, values, and goals can introduce ethical challenges. We advise clarifying stakeholders' roles and preparing employees and managers for the return to work process by providing sufficient information. The ethical challenges and suggested measures to minimize them, should be considered when planning return to work interventions that involve several stakeholders.

Karlsson et al. 2025.

International Journal of Qualitative Studies on Health and Well-being, vol. 19, no. 1.

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Keywords: Problem-solving; adjustment disorder; anxiety; common mental disorders; depression; ethical challenges; sickness absence; work-directed interventions.

Evidence Level: 5B

Link:

https://www.tandfonline.com/doi/full/10.1080/17482631.2024.2308674?rfr_dat=cr_pub++0pubmed&urlver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org

Prognostic factors for return to work in patients affected by chronic low back pain: A systematic review

Chronic low back pain (LBP) represents a leading cause of absenteeism from work. An accurate knowledge of complex interactions is essential in understanding the difficulties of return to work (RTW) experienced by workers affected by chronic LBP. This study aims to identify factors related to chronic LBP, the worker, and the psycho-social environment that could predict and influence the duration of an episode of sick leave due to chronic LBP. Studies reporting the relation between prognostic factors and absenteeism from work in patients with LBP were included. The selected studies were grouped by prognostic factors. The results were measured in absolute terms, relative terms, survival curve, or duration of sick leave. The level of evidence was defined by examining the quality and the appropriateness of findings across studies in terms of significance and direction of relationship for each prognostic factor. A total of 20 studies were included. Prognostic factors were classified in clinical, psycho-social, and social workplace, reaching a total of 31 constructs. Global conditions with less favorable repercussions on worker's lives resulted in a delay in time to RTW. Older age, female, higher pain or disability, depression, higher physical work demands, and abuse of smoke and alcohol have shown strong level of evidence for negative outcomes. High global health well-being, great socioeconomic status, and good mental health conditions are decisive in RTW outcomes. Interventions that aim at RTW of employee's sick-listed with LBP should focus on psycho-social aspects, health behaviors, and workplace characteristics.

Russo et al. 2025.

Musculoskeletal Surgery, vol. 108, no. 4.

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Keywords: Low back pain; prognostic factors; return to work; sick leave; systematic review.

Evidence Level: 1A

Link: <https://pmc.ncbi.nlm.nih.gov/articles/PMC11582328/>

Presenteeism and Absenteeism

Explaining presenteeism behaviour with the theory of planned behaviour: A longitudinal study

Purpose: This study uses the Theory of Planned Behaviour (TPB) to explore presenteeism, where individuals work despite being ill. The research seeks to understand how attitudes, subjective norms, and perceived behavioural control are associated with presenteeism behaviours. **Methods:** A longitudinal design was employed, involving 2814 employees from 16 companies. Data were collected using a survey on two measurement points, which included validated scales and vignettes to assess attitudes toward presenteeism. The data were analysed using cluster analysis and a linear mixed effects regression to evaluate the TPB model. **Results:** Three clusters of attitudes toward presenteeism were identified through cluster analysis. The model explained 27.8% of the variance in the fixed effects and 52.6% in the combined fixed and random effects. The regression model found associations between presenteeism and factors such as quantitative demands, work-privacy conflict, and leadership culture. Attitudes towards presenteeism were a strong predictor, with specific clusters showing differing propensities to work while ill.

Conclusion: The study confirms the suitability of the TPB in explaining presenteeism. It highlights the importance of individual attitudes, subjective norms, and perceived behavioural control in shaping presenteeism. The findings suggest that promoting a health-supportive workplace culture, including open communication about illness, might reduce presenteeism.

Golz et al. 2025.

International Archives of Occupational and Environmental Health, vol. 97, no. 10.

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Keywords: Attitudes; longitudinal; occupational health; presenteeism; theory of planned behaviour; vignettes.

Evidence Level: 4B

Link: <https://link.springer.com/article/10.1007/s00420-024-02108-5>

Work-family conflicts and sickness absence due to mental disorders among female municipal employees: A register-linked study comparing health and social care employees to employees in other sectors

Objectives: This study aimed to examine (i) if work-to-family conflicts (WtFC) and family-to-work conflicts (FtWC) are associated with sickness absence due to mental disorders and (ii) whether these associations are different among health and social care (HSC) employees compared to other municipal employee sectors. **Methods:** The Helsinki Health Study survey data collected in 2017 among 19-39-year-old female municipal employees (N=2557) were prospectively linked to administrative Social Insurance Institution of Finland register data on long-term sickness absence due to mental disorders (SA-MD) covering a follow-up of up to five years. The associations of WtFC and FtWC and SA-MD were analysed using Cox regression models stratified by employment sector (HSC, education, other), adjusting for sociodemographic and health-related covariates. **Results:** Of HSC employees, 16% had SA-MD during the follow-up, which surpassed the figures for employees in education (12%) and other (11%) sectors. In the HSC sector, the youngest employees had the highest prevalence of SA-MD and, among HSC employees, prior SA-MD was the most common. In Kaplan-Meier curves, the steepest increase in SA-MD was observed for HSC employees. WtFC [hazard ratio (HR) 1.84, 95% confidence interval (CI) 1.39-2.45] and FtWC (HR 1.78, 95% CI 1.32-2.40) were associated with SA-MD among HSC employees. The associations were rather similar for employees in education and other sectors. Adjusting for work-related factors and health history somewhat attenuated the associations. **Conclusions:** Better possibilities to combine work and family life might aid in preventing SA-MD in all employment sectors.

Harkko et al. 2025.

Scandinavian Journal of Work, Environment and Health, vol. 50, no. 8.

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Keywords: Work-family conflict; sickness absence; mental disorders; employees; female.

Evidence Level: 4B

Link: <https://www.sjweh.fi/article/4191>

Modifiable prognostic factors of high societal costs among people on sick leave due to musculoskeletal disorders: A replication study

Background: Musculoskeletal disorders are an extensive burden to society, yet few studies have explored and replicated modifiable prognostic factors associated with high societal costs. This study aimed to replicate previously identified associations between nine modifiable prognostic factors and high societal costs among people on sick leave due to musculoskeletal disorders. **Methods:** Pooled data from a three-arm randomised controlled trial with 6 months of follow-up were used, including 509 participants on sick leave due to musculoskeletal disorders in Norway. Consistent with the identification study, the primary outcome was societal costs dichotomised as high (top 25th percentile) or low. Societal costs included healthcare utilization (primary, secondary, and tertiary care) and productivity loss (absenteeism, work assessment allowance and disability benefits) collected from public records. Binary unadjusted and adjusted logistic regression analyses were used to replicate previously identified associations between each modifiable prognostic factor and having high costs. **Results:** Adjusted for selected covariates, a lower degree of return-to-work expectancy was associated with high societal costs in both the identification and replication sample. Depressive symptoms and health literacy showed no prognostic value in both the

identification and replication sample. There were inconsistent results with regards to statistical significance across the identification and replication sample for pain severity, self-perceived health, sleep quality, work satisfaction, disability, and long-lasting disorder expectation. Similar results were found when high costs were related to separately healthcare utilization and productivity loss. **Conclusion:** This study successfully replicated the association between return-to-work expectancy and high societal costs among people on sick leave due to musculoskeletal disorders. Other factors showed no prognostic value or inconsistent results.

Killingmo et al. 2025.

BMC Musculoskeletal Disorders, vol. 25, no. 1.

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Keywords: Costs; healthcare utilization; musculoskeletal disorders; productivity loss; prognostic factor research.

Evidence Level: 2B

Link: <https://bmcmusculoskeletdisord.biomedcentral.com/articles/10.1186/s12891-024-08132-3>

Chronic noncommunicable diseases and absenteeism from work: National Survey of Health, 2019

Objective: To evaluate the association between burden of disease and multimorbidity and absenteeism in Brazil. **Methods:** This is a cross-sectional study using data from the National Survey of Health 2019. The assessed outcome was absenteeism from work. The burden of disease was assessed by simply counting a list of 14 morbidities and multimorbidity was defined as: \geq two chronic diseases. Poisson regression models stratified by sex were used to estimate crude and adjusted prevalence ratios and their respective 95% confidence intervals. **Results:** Of the 96,131,029 employed individuals, 38.5% reported absenteeism (95%CI 32.9-44.3). The most prevalent morbidities among women who reported absenteeism were back problems (50.8%), depression (42.9%), and hypertension (41.6%); and among men, hypertension (39.7%), chronic back pain (34.1%), and dyslipidemia (19.9%), among those who reported absenteeism. Having multimorbidity increased the report of absenteeism among women by 73% (95%CI 1.01-2.96); among men, there was no association after progressive adjustment for sociodemographic and health factors [PR 1.27 (95%CI 0.96-1.71)]. **Conclusion:** The burden of disease and multimorbidity are highly prevalent among employed individuals and are strongly related to absenteeism from work, especially among women. In this sense, workers must be the target of interventions to reduce the impact of chronic noncommunicable diseases.

Fernandes et al. 2025.

Revista Brasileira de Epidemiologia, vol. 27.

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Keywords: Chronic noncommunicable diseases; absenteeism.

Evidence Level: 4B

Link: <https://www.scielo.br/j/rbepid/a/frhhpyvw3YM6rJt4vDLpv9D/?lang=en>

The effectiveness of a problem-solving intervention with workplace involvement on self-reported sick leave, psychological symptoms and work ability: A cluster randomised clinical trial

Background: Problem-solving interventions with workplace involvement (PSI-WPI) have been shown to reduce sick leave and increase return to work in an occupational health services context. However, many employees struggle with reduced work functioning, anxiety-, and depressive symptoms up to 12 months after a sick leave episode, and it is unclear if the intervention affects outcomes other than sick leave. The aim of this study is to investigate if a PSI-WPI added to care as usual (CAU) is superior to CAU with respect to self-reported sick leave, psychological symptoms, work ability, work performance, and health after RTW when provided in primary care. **Methods:** Employed individuals aged 18-59 years on sick leave (2 to 12 weeks) diagnosed by a physician at a primary care center with mild to moderate depression, anxiety, or adjustment disorder were enrolled in a two-armed cluster-randomised trial evaluating the effectiveness of a PSI-WPI. Multiple outcomes were recorded at baseline, six months, 12 months, and every fourth week during the study period. Outcomes were categorised into psychological symptoms, health, work ability, work performance, and self-reported sick leave. Data were analysed using MANOVA, GEE (Generalized Estimating Equations), and cox regression. **Results:** One hundred ninety-nine individuals responded to the

invitation to participate; one participant withdrew, one was excluded as the employment ended, nine did not answer the baseline survey, and three were removed from the analysis due to missing data. The analysis included 81 subjects who received the intervention and 104 subjects who received the control. Baseline characteristics were similar across both groups. No differences between the groups were found among either variables except one. There was a significant difference between the groups in self-rated health (EQ5D) in favour of the CAU group from baseline to six-month follow-up, with a mean difference of -8.44 (-14.84, -2.04). **Conclusions:** A problem-solving intervention with workplace involvement added to CAU did not result in statistically significant reductions in outcomes. Further research is needed to understand why problem-solving interventions appear to have an effect on sick leave in an occupational health services context and not in a primary care context.

Eklund et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: Adjustment disorder; anxiety; cluster-randomised trial; common mental disorders; depression; primary care; problem-solving; sick leave; workplace involvement.

Evidence Level: 2B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20564-z>

Workers Compensation

Barriers, facilitators, and requirements for a telerehabilitation aftercare program for patients after occupational injuries: Semi structured interviews with key stakeholders

Background: Patients with occupational injuries often receive multidisciplinary rehabilitation for a rapid return to work. Rehabilitation aftercare programs give patients the opportunity to help patients apply the progress they have made during the rehabilitation to their everyday activities. Telerehabilitation aftercare programs can help reduce barriers, such as lack of time due to other commitments, because they can be used regardless of time or location. Careful identification of barriers, facilitators, and design requirements with key stakeholders is a critical step in developing a telerehabilitation aftercare program. **Objective:** This study aims to identify barriers, facilitators, and design requirements for a future telerehabilitation aftercare program for patients with occupational injuries from the perspective of the key stakeholders. **Methods:** We used a literature review and expert recommendations to identify key stakeholders. We conducted semi structured interviews in person and via real-time video calls with 27 key stakeholders to collect data. Interviews were transcribed verbatim, and thematic analysis was applied. We selected key stakeholder statements about facilitators and barriers and categorized them as individual, technical, environmental, and organizational facilitators and barriers. We identified expressions that captured aspects that the telerehabilitation aftercare program should fulfill and clustered them into attributes and overarching values. We translated the attributes into one or more requirements and grouped them into content, functional, service, user experience, and work context requirements. **Results:** The key stakeholders identified can be grouped into the following categories: patients, health care professionals, administrative personnel, and members of the telerehabilitation program design and development team. The most frequently reported facilitators of a future telerehabilitation aftercare program were time savings for patients, high motivation of the patients to participate in telerehabilitation aftercare program, high usability of the program, and regular in-person therapy meetings during the telerehabilitation aftercare program. The most frequently reported barriers were low digital affinity and skills of the patients and personnel, patients' lack of trust and acceptance of the telerehabilitation aftercare program, slow internet speed, program functionality problems (eg, application crashes or freezes), and inability of telerehabilitation to deliver certain elements of in-person rehabilitation aftercare such as monitoring exercise performance. In our study, the most common design requirements were reducing barriers and implementing facilitators. The 2 most frequently discussed overarching values were tailoring of telerehabilitation, such as a tailored exercise plan and tailored injury-related information, and social interaction, such as real-time psychotherapy and digital and in-person rehabilitation aftercare in a blended care approach. **Conclusions:** Key stakeholders reported on facilitators, barriers, and design requirements

that should be considered throughout the development process. Tailoring telerehabilitation content was the key value for stakeholders to ensure the program could meet the needs of patients with different types of occupational injuries.

Lange-Drenth et al. 2025.

JMIR Formative Research, vol. 8.

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Keywords: Aftercare; eHealth development; mobile phone; occupational injuries; rehabilitation; stakeholder participation; telerehabilitation; value specification; vocational rehabilitation.

Evidence Level: 5B

Link: <https://formative.jmir.org/2024/1/e51865>

Exploring organisational support to apply best practice in the sick leave and rehabilitation process from a multiprofessional front-line perspective: A qualitative study

Objectives: To explore the experiences of organisational support to apply best practices held by front-line employees working with patients in the sick leave and rehabilitation process (SRP). **Design:** Qualitative study design. Data were collected with focus group interviews in Region Västra Götaland, Sweden. Participants discussed their perceptions of organisational support to apply the best SRP practice in a primary healthcare context. **Participants:** Purposive sampling was conducted to capture a range of experiences among various professionals, including general practitioners (n=6), rehabilitation coordinators, other primary healthcare professionals (n=13) and caseworkers from the Social Insurance Agency, Employment Agency and Social Services (n=12). **Results:** Informants perceived that their good intentions to work for the best interests of each patient were not enough to overcome inadequate organisational prerequisites. Identified themes described unequal care due to significant practice variation, conflicting messages, a situation where the patient loses control and mismatch between available support and patient needs. Perceived potential consequences for the patients included legal uncertainty of assessments, harmful passivity of the individual through misapplied sick leave and the risk of overlooking non-medical factors that could be managed in a safer and more well-adapted way. **Conclusions:** Neither guidelines on person-centred approaches, nor laws regulating the right to coordinated individual planning, seem to have fulfilled the intended purpose. The informants depicted an SRP obstructing individualised care, thus risking worsening patients' well-being and abilities. The opportunities to improve the quality of the processes within the SRP, and simultaneously make them more effective, appear to be extensive.

Löfgren et al. 2025.

BMJ Open, vol. 14, no. 11.

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Keywords: Health services administration and management; patient-centered care; primary health care; qualitative research.

Evidence Level: 5B

Link: <https://bmjopen.bmj.com/content/14/11/e085826.long>

Wellbeing after finalization of a Workers' Compensation Claim: A systematic scoping review

Objective: A workers' compensation claim may have significant negative impacts on an injured worker's wellbeing. Wellbeing provides a good global measure of potential effects of a claim on an individual, and is important for contemporary economic modelling. The purpose of this study was to synthesize knowledge about the wellbeing of injured workers after the finalization of a workers' compensation claim and identify gaps in the current literature. **Methods:** A systematic scoping review was conducted. **Results:** 71 full-text articles were screened for inclusion, with 32 articles eligible for this review. None of the included articles evaluated overall wellbeing. Included articles did evaluate a variety of constructs inherent in wellbeing. Injured workers were generally disadvantaged in some manner following claim finalization. The literature recommends a focus on reducing negative impacts on injured workers after finalization of a compensation claim, with a need for regulatory bodies to review policy in this area. **Conclusion:** There appears to be potential for ongoing burden for individuals, employers, and society after finalization of a workers'

compensation claim. A gap in knowledge exists regarding the specific evaluation of wellbeing of injured workers following finalization of a workers' compensation claim.

Weir et al. 2025.

Journal of Occupational Rehabilitation, vol. 34, no. 4.

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Keywords: Occupational health; wellbeing; workers' compensation; workplace injury.

Evidence Level: 1A

Link: <https://link.springer.com/article/10.1007/s10926-023-10168-6>

Working hours

Long working hours and health in Denmark: A post hoc analysis of three cohort studies

Background: To protect the safety and health of workers, national legislations often stipulate an upper limit to weekly working time. The purpose of the present study was to provide information that may facilitate the obtainment of evidence-based limits to weekly working time. **Objective:** To estimate incidence rate ratios (RRs) of (i) hospital treatment or death due to accidental injuries, (ii) redeemed prescriptions for psychotropic drugs and (iii) redeemed prescriptions for antihypertensive drugs, respectively, as continuous functions of weekly working hours among employees in the general population of Denmark.

Methods: Baseline data on working time arrangements were obtained from the Danish Labor Force Surveys of 1999-2013. Follow-ups with a mean duration of 1.8, 4.0 and 6.6 years for accidental injuries, psychotropic drugs and antihypertensive drugs, respectively, were accomplished through national registers. Adjusted RRs were obtained through Poisson regression in the interval 32-80 weekly working hours (wwh). The reference (standard working hours) was set at 37 wwh. RR estimates were interpreted in accordance with a modified version of Monson's guide to strength of associations, in which a RR in the open interval 0.83 to 1.2 is classified as 'no association' (too weak to be detected by observational studies). **Results:** The estimated RRs as well as the upper and lower limits of their 95% confidence intervals lied within the no-association zone throughout the intervals 32-76, 32-64 and 32-69 wwh, for accidental injury, psychotropic drug use and antihypertensive drug use, respectively. The estimated RRs for psychotropic drug use decreased from 1.08 (95% CI: 1.03-1.13) at 32 wwh to 0.96 (0.93-0.99) at 45 wwh. They thereafter increased to 1.00 (0.95-1.06) at 55 wwh and 1.31 (1.08-1.63) at 80 wwh. The estimated RRs for accidental injury and antihypertensive drug use increased slowly from 1.00 at 37 wwh to 1.04 (0.88-1.24) and 1.11 (0.94-1.31), respectively, at 80 wwh. **Conclusion:** These results suggest that, from a societal perspective, the effect of wwh on the rates of these types of morbidity is negligible throughout the interval 32-64 wwh.

Hannerz 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: Accidental injuries; antihypertensive drugs; EU working time directive; evidence-based legislation; hospital treatment; occupational exposure limits; occupational health; psychotropic drugs.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20754-9>

Work-leave rotation among general practitioners in Norwegian municipalities

Background: A number of municipalities have introduced work-leave rotation (aka 'North Sea shift') for general practitioners, whereby the doctors alternate between periods of work and leave over the year. We have investigated the reasons for this type of work schedule, its prevalence and scope, and experiences with this form of working. **Material and method:** We have undertaken a multiple-case study using data from Statistics Norway, the GP register, municipal documents, brief telephone interviews with doctors working a rotating schedule and in-depth interviews with healthcare leaders. We have performed descriptive analyses of the quantitative data material and thematic analyses of the in-depth interviews.

Results: We identified 25 municipalities that had introduced work-leave rotation for GPs. Of these, 20 participated in our study. Seventeen of these 20 municipalities were in centrality class 5 or 6 (least central). The most common schedule was two weeks of work followed by four weeks of leave. All rotating schedules included out-of-hours duty. The study also included 64 doctors in work-leave rotation schemes, half of whom had been recruited from other general practice positions. Altogether 65 % of the doctors were not specialists in general practice. On average, there were ten applicants for each vacancy announced with work-leave rotation. Based on the interviews with healthcare leaders in the 20 municipalities, we identified four topics: i) The path to the work-leave rotation scheme; ii) Inadequate legal and contractual framework; iii) Work-leave rotation and specialisation in general practice; and iv) Stabilisation, vulnerability and flexibility. **Interpretation:** A growing number of GPs are working on a rotating schedule. This form of work appears to recruit GPs to the least central municipalities. The rotating schedules come in various forms. The labour contracts are negotiated locally, and our findings indicate that the legal and contractual basis that regulates these work-leave rotation schemes is inadequate.

Prestgaard et al. 2025.

Journal of the Norwegian Medical Association, vol. 144, no. 14.

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Keywords: Work-leave rotation; general practitioners; Norwegian.

Evidence Level: 4B

Link: <https://tidsskriftet.no/en/2024/11/original-article/work-leave-rotation-among-general-practitioners-norwegian-municipalities>

Wellness Programs

The implementation of an integrated workplace health promotion program in Dutch organizations: A mixed methods process evaluation

Objective: To gain insight into 1) the degree of implementation of an integrated workplace health promotion program (WHPP) 2) the perceptions of employers and employees regarding an integrated WHPP and 3) the contextual factors that hindered or enhanced implementation. **Methods:** Data were collected by means of questionnaires, interviews among 19 employees, supervisors and HR-professionals, monitoring charts and observations at 6-10 months after the start of the implementation of the integrated WHPP. To evaluate the implementation process, ten process indicators from the evaluation frameworks of Nielsen & Randall and Wierenga were assessed. Descriptive analyses were performed for the process indicators as measured by questionnaires, monitoring charts and observations. Interviews with employers and employees were recorded, transcribed and then coded by two researchers independently by means of thematic coding. **Results:** The results cover the following topics: implemented activities, the working group, engagement of employees, the role of management and policy and organizational preconditions. Although the criteria of the WHPP were not completely met, various activities were implemented in all participating organizations. Working groups consisting of Human Resources professionals, supervisors and employees, who selected and implemented activities, were composed within each organization. 22% of the employees did not feel involved in the implementation process. The absence of organizational policies regarding WHP hampered implementation. Organizations had the intention to continue with the integrated WHPP, which requires sufficient time and budget. **Conclusions:** The implementation of the integrated WHPP appeared to be challenging and complex. Working groups indicated that they made the first important steps in integrating WHP in their organization and had the intention to continue with the implementation. However, to increase the impact, employers and employees should have the opportunity to implement and participate in WHP. Hence, organizational policies regarding WHP and active support of higher management are expected to be essential.

Smit et al. 2025.

PLoS One, vol. 19, no. 11.

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Keywords: Health promotion program; work health; Dutch.

Evidence Level: 5B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0308856>

Organisational Issues

Effect of the Norwegian agreement on a more inclusive working life on use of sick leave and pregnancy benefits among pregnant women: A cohort study

Background: We aimed to estimate the effect of the voluntary Norwegian Agreement on a More Inclusive Working Life (IA Agreement) on use of sickness absence (SA) and pregnancy benefits among pregnant women. **Methods:** Pregnant women (n = 112,486) with a birth during 1.12.2003-31.12.2010 were followed from 6 to 37 gestational weeks in a continuous time multistate model with the following states: work, full SA, graded SA, pregnancy benefits, maternity leave, and other. Women working in IA companies were compared to those in non-IA companies regarding incidence and duration of SA and pregnancy benefits. Differences between groups with respect to calendar year, age, civil status, education, industry, and number of employees in the company were adjusted for using inverse probability of treatment weighting. Absolute differences in probabilities over time, expected length of stay (ELOS) in each state and differences in ELOS between IA and non-IA were calculated. 95% confidence intervals (CI) were generated using bootstrapping (1,000 repetitions). **Results:** Adjusted analyses suggest that women working in IA companies were more likely to be in full SA in the first and last trimesters, but less likely between 14 and 28 weeks, than those in non-IA companies. The probability of being in work mirrored this, with women in IA companies tending to spend half a day more in work (ELOS difference 0.55, 95% CI -1.79, 3.02). Differences were not statistically significant. The use of graded SA was slightly higher (ELOS difference 0.46, 95% CI -0.87, 1.72) and the use of pregnancy benefits slightly lower (ELOS difference -0.43, 95% CI -1.32, 0.42) among those in IA companies compared to non-IA companies. **Conclusions:** Women in IA companies tended to spend more time in work and graded SA, but less time on pregnancy benefits. Differences in full SA varied during pregnancy and were most positive mid-pregnancy. This indicates that IA measures could be more effective for conditions experienced at this point. However, effects were small and not statistically significant, which may indicate the IA Agreement has not focused much on pregnant women.

Hasting et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: IA Agreement, MBRN, MoBa, multistate models, pregnancy, pregnancy benefits, sickness absence, work participation.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20933-8>

Enhancing employee job satisfaction through organizational climate and employee happiness at work: A mediated-moderated model

Background: The Chinese educational sector is dynamic; hence, there is a need to anchor the factors that influence faculty job satisfaction and performance. These are channelled through organizational climate (OrgC) and employee happiness (EmH). The growing integration of artificial intelligence applications (AIAs)-like ChatGPT-into the learning environment raises questions about AIAs' moderating role in the relationship between EmH at work and EJoS. **Purpose:** This research empirically examines the influence of OrgC on EmH, the direct and mediated impacts of EmH on EJoS, and the moderating effect of AIAs on the influence of EmH on EJoS. **Design/methodology:** Data was collected from faculty members of various Chinese universities. Using SmartPLS version 4.1, I have analysed six hypotheses and the corresponding research questions. **Findings:** The outcomes include favourable effects of OrgC on EmH and EJoS. EmH significantly correlates with EJoS, partially mediating the relationship between OrgC and EJoS. Interestingly, the research did not find evidence that AIAs moderated the relationship (ChatGPT) between EmH and EJoS. The predictors (OrgC and EmH) and moderation of AIAs explained a 51.9% change in EJoS, and EJoS explained a 13.3% variance in employee job performance. **Conclusion:** This study's findings support a supportive OrgC as the key instrument for improving employees' happiness and job satisfaction. AI assistants, such as ChatGPT, provide relative efficiency and support but do not significantly affect how EmH at work relates to job satisfaction.

Jianchun 2025.

BMC Psychology, vol. 12, no. 1.

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Keywords: Artificial intelligence applications; employee happiness; employee performance; job satisfaction; organizational climate.

Evidence Level: 5B

Link: <https://bmcpyschology.biomedcentral.com/articles/10.1186/s40359-024-02269-5>

Training emotional competencies at the workplace: A systematic review and meta-analysis

Recent systematic reviews have shown that emotional competencies can be improved through training. In the workplace, such training has become increasingly popular over the last decade. These programs aim to enhance emotional intelligence, empathy or emotion regulation. This study wants to assess the training effects and potential moderators of these workplace interventions. To our knowledge, this is the first systematic review that focuses on the workplace context and integrates emotional intelligence, empathy, and emotion regulation training interventions. This study has been preregistered with PROSPERO and a protocol has been published before the review was conducted (CRD42021267073). We conducted a systematic literature search using Embase, PsycInfo, PSYINDEX, Web of Science and the Cochrane Central Register of Controlled Trials. The included studies were analyzed in two meta-analyses. In the primary analysis, we analyzed standardized mean changes in emotional competencies before and after the training for 50 included studies, depending on (a) training construct and (b) participants' profession (teachers, health professionals, managers, and others). To determine the efficacy of the trainings, we conducted a separate metaanalysis of controlled trials only ($k = 27$). Both meta-analyses yielded moderate overall effect sizes that also persisted more than three months after the training end: (1) $SMD_{pre-post} = 0.44$ (95% CI [0.29, 0.59]), (2) $SMDEG-CG = 0.46$ (95% CI [0.30, 0.63]). All professions benefited equally from the interventions, and we observed no significant differences in the effectiveness of emotional intelligence, empathy, and emotion regulation trainings. Overall, our results suggest that workplace interventions effectively train emotional competencies, regardless of profession or specific training focus. Limitations are the high heterogeneity, and the low methodological quality of the studies analyzed. Our study shows the need for more high-quality studies, like randomized controlled trials. Additionally, companies may consider incorporating emotional competence training into their employee and leadership development programs routinely. This study was preregistered on PROSPERO (CRD42021267073).

Mehler et al. 2025.

BMC Psychology, vol. 12, no. 1.

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Keywords: Emotion regulation; emotional intelligence; empathy; leadership; meta-analysis; training and development; workplace intervention.

Evidence Level: 1A

Link: <https://bmcpyschology.biomedcentral.com/articles/10.1186/s40359-024-02198-3>

Shift Work

Adaptive sleep behaviours and shift work tolerance during the transition to shift work

Objective: To evaluate whether recruit paramedics adapt their sleep behaviour during the first 12-months of shift work and to identify sleep behaviours that are associated with better shift work tolerance (SWT) after 12-months of shift work. **Methods:** Recruit paramedics ($n = 105$; $M_{age} = 25.81$ years; 51.38% female) were evaluated before (baseline), and after six- and 12-months of shift work. At each timepoint, participants completed questionnaires evaluating their mental health and sleep. Participants also underwent 14 days of sleep and shift monitoring (sleep/work diaries and actigraphy) at each timepoint to examine sleep behaviours, including sleep opportunity (SO), sleep regularity and number of sleep episodes. **Results:** Linear mixed models found SO increased (on day shifts and rest days), and sleep regularity decreased between baseline and follow-up timepoints. There were no changes in SO (on day shifts, nightshifts, and rest days) or sleep regularity between six- and 12-months of shift work. Latent profile

analysis at 12-months follow-up identified high (n = 52), medium (n = 27), and low (n = 9) SWT levels (measured via depression, anxiety, insomnia, sleep quality and sleep efficiency) in paramedics. Reduced sleep regularity (i.e., more irregular sleep) between six- and 12-months of work and prioritising major sleep (rather than naps) at six-months predicted high SWT. **Conclusions:** These findings suggest clear SWT levels exist early in paramedics' careers whereby symptoms of depression, anxiety, and insomnia were the strongest contributors to SWT. New paramedics' sleep behaviours, including sleep regularity and prioritisation of longer sleep between nightshifts, may play an important role in influencing how paramedics tolerate shift work.

Harris et al. 2025.

Sleep Medicine, vol. 124.

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Keywords: Longitudinal study; paramedics; shift work tolerance; sleep behaviours.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S1389945724004696?via%3Dihub>

Moral decision-making at night and the impact of night work with blue-enriched white light or warm white light: A counterbalanced crossover study

Background: Cognitive function, including moral decision-making abilities, can be impaired by sleep loss. Blue-enriched light interventions have been shown to ameliorate cognitive impairment during night work. This study investigated whether the quality of moral decision-making during simulated night work differed for night work in blue-enriched white light, compared to warm white light. **Methods:** Using a counterbalanced crossover design, three consecutive night shifts were performed in blue-enriched white light (7000 K) and warm white light (2500 K) provided by ceiling-mounted LED luminaires (photopic illuminance: ~200 lx). At 03:30 h on the second shift (i.e. twice) and at daytime (rested), the Defining Issues Test-2, assessing the activation of cognitive schemas depicting different levels of cognitive moral development, was administered. Data from 30 (10 males, average age 23.3 ± 2.9 years) participants were analysed using linear mixed-effects models. **Results:** Activation of the post-conventional schema (P-score), that is, the most mature moral level, was significantly lower for night work in warm white light (EMM; estimated marginal mean = 44.3, 95% CI = 38.9-49.6; $p=0.007$), but not blue-enriched white light (EMM = 47.5, 95% CI = 42.2-52.8), compared to daytime (EMM = 51.2, 95% CI = 45.9-56.5). Also, the P-score was reduced for night work overall (EMM = 45.9, 95% CI = 41.1-50.8; $p=0.008$), that is, irrespective of light condition, compared to daytime. Neither activation of the maintaining norms schema (MN-score), that is, moderately developed moral level, nor activation of the personal interest schema (i.e. the lowest moral level) differed significantly between light conditions. The MN-score was however increased for night work overall (EMM = 26.8, 95% CI = 23.1-30.5; $p=0.033$) compared to daytime (EMM = 23.1, 95% CI = 18.9-27.2). **Conclusion:** The results indicate that moral decisions during simulated night work in warm white light, but not blue-enriched white light, become less mature and principle-oriented, and more rule-based compared to daytime, hence blue-enriched white light may function as a moderator. Further studies are needed, and the findings should be tentatively considered. Trial registration: ClinicalTrials.gov (ID: NCT03203538) Registered: 26/06/2017.

Sunde et al. 2025.

Annals of Medicine, vol. 56, no. 1.

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Keywords: Shift work; colour temperature; light emitting diode; sleep deprivation.

Evidence Level: 3B

Link: <https://pmc.ncbi.nlm.nih.gov/articles/PMC11028009/>

Behavioural therapy for shift work disorder improves shift workers' sleep, sleepiness and mental health: A pilot randomized control trial

The present study evaluates the efficacy of behavioural therapy adapted for shift work disorder with a randomized control design in a healthcare population. Forty-three night shift workers (m. age: 34 years; 77% women) experiencing shift work disorder were randomised to either the behavioural therapy for shift work disorder (BT-SWD) or a waiting-list control group offered after the waiting period. Participants

completed questionnaires on insomnia, sleepiness and mental health pre- and post-treatment, pre- and post-waiting, and at follow-up, and a sleep diary. As night shift workers alternate between sleeping during the day after their night shifts and transitioning to nighttime sleep on days off, insomnia severity and sleep variables were analysed for daytime and nighttime sleep. The BT-SWD involved sleep restriction therapy, stimulus control and fixed sleep periods in the dark. Statistical analyses were performed under intent-to-treat and per-protocol approaches. Repeated-measures two-way ANCOVA analysis, controlling for age, sex and pre-treatment daytime total sleep time, was performed with Bonferroni corrections, and between-group effect sizes computed. Fourteen participants dropped out after randomisation. Under the intent-to-treat analysis, BT-SWD participants had a significant greater decrease in daytime insomnia severity and an increase in daytime total sleep time at post-treatment than the control group, with large between-group effect sizes (-1.25 and 0.89). These corresponding results were also significant with large effect sizes under the per-protocol analysis. Sleepiness, anxiety and depression levels improved at post-treatment and maintained at follow-up when the BT-SWD treated controls were added to the BT-SWD group. The behavioural therapy for shift work disorder can be used to improve the sleep and mental health of healthcare night workers.

Vallières et al. 2025.

Journal of Sleep Research, vol. 33, no. 6.

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Keywords: Behavioural therapy; healthcare; insomnia; shift work disorder; treatment.

Evidence Level: 2B

Link: <https://onlinelibrary.wiley.com/doi/10.1111/jsr.14162>

Chronobiological disruptions: Unravelling the interplay of shift work, circadian rhythms, and vascular health in the context of stroke risk

Shift work, particularly night shifts, disrupts circadian rhythms and increases stroke risk. This manuscript explores the mechanisms connecting shift work with stroke, focusing on circadian rhythms, hypertension, and diabetes. The circadian system, controlled by different mechanisms including central and peripheral clock genes, suprachiasmatic nuclei (SCN), and pineal gland (through melatonin production), regulates body functions and responds to environmental signals. Disruptions in this system affect endothelial cells, leading to blood pressure issues. Type 2 diabetes mellitus (T2DM) is significantly associated with night shifts, with circadian disturbances affecting glucose metabolism, insulin sensitivity, and hormone regulation. The manuscript examines the relationship between melatonin, insulin, and glucose balance, highlighting pathways that link T2DM to stroke risk. Additionally, dyslipidemia, particularly reduced HDL-c levels, results from shift work and contributes to stroke development. High lipid levels cause oxidative stress, inflammation, and endothelial dysfunction, increasing cerebrovascular risks. The manuscript details the effects of dyslipidemia on brain functions, including disruptions in blood flow, blood-brain barrier integrity, and neural cell death. This comprehensive analysis emphasizes the complex interplay of circadian disruption, hypertension, diabetes, and dyslipidemia in increasing stroke risk among shift workers. Understanding these mechanisms is essential for developing targeted interventions to reduce stroke susceptibility and improve cerebrovascular health in this vulnerable population.

Li et al. 2025.

Clinical and Experimental Medicine, vol. 25, no. 1.

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Keywords: Circadian rhythms; diabetes mellitus; hypertension; shift work; stroke risk.

Evidence Level: 6B

Link: <https://link.springer.com/article/10.1007/s10238-024-01514-w>

Night shift work and prostate cancer: A large cohort study from UK Biobank and Mendelian randomisation study

Objective: The global concern regarding the health implications of night shift work has escalated. Nevertheless, variations exist in the observed association between night shift work and prostate cancer (PCa). This study aims to systematically explore the association between night shift work and the risk of

PCa. **Design:** Cohort study and Mendelian randomisation (MR) study were used. **Setting:** Cohort study data was from the UK Biobank (UKB). MR study using data was from the Finngen study and UKB through the Integrative Epidemiology Unit (IEU) Open Genome-Wide Association Study Project. **Participants:** Participants without prior PCa in paid employment or self-employment were included in the current work schedule cohort, participants without PCa who provided employment history formed the lifetime night shift work cohort. **Main outcome measures:** The outcome, incident PCa, was obtained from cancer register through linkage to national cancer databases. National cancer registries centralised information received from separate regional cancer centres around the UK. **Results:** A total of 130 853 participants were included in the current work schedule cohort, while the lifetime night shift work cohort comprised 49 511 participants. Over a median follow-up duration of 13.9 years, the current work schedule cohort witnessed 4993 incident cases of PCa, while the lifetime night shift work cohort recorded 2022 PCa cases. In the analysis of the current work schedule, final model showed that no significant association was found between shift work and PCa risk, whether it involved shift but no night shifts (HR 0.96, 95% CI 0.85 to 1.08), some night shifts (HR 1.16, 95% CI 0.99 to 1.33) and usual night shifts (HR 1.01, 95% CI 0.85 to 1.19). In the analysis of the average frequency of night shift work, final model showed no significant impact of different night shift frequencies (<3/month: HR 0.97, 95% CI 0.73 to 1.29; 3-8/month: HR 0.99, 95% CI 0.83 to 1.19; >8/month: HR 0.89, 95% CI 0.73 to 1.07) on the risk of PCa. No significant association was found for either <10 years (HR 0.89, 95% CI 0.72 to 1.09) or ≥10 years (HR 1.00, 95% CI 0.86 to 1.16) of night shift work. Subsequent subgroup and sensitivity analyses demonstrated consistent results without significant alterations. Furthermore, in the two-sample MR analysis, no statistically significant causal relationship was identified between night shift work and the incidence of PCa. **Conclusion:** In both the cohort studies and MR analysis, our investigation did not find any association between night shift work and PCa.

Yang et al. 2025.

BMJ Open, vol. 14, no. 12.

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[\(https://creativecommons.org/licenses/by-nc/4.0/\)](https://creativecommons.org/licenses/by-nc/4.0/)

Keywords: Mendelian Randomization Analysis; occupational & industrial medicine; prostate disease.

Evidence Level: 4B

Link: <https://bmjopen.bmj.com/content/14/12/e084401.long>

Circadian-informed lighting improves vigilance, sleep, and subjective sleepiness during simulated night-shift work

Study objectives: Shiftwork is associated with cognitive impairment and reduced sleep time and quality, largely due to circadian misalignment. This study tested if circadian-informed lighting could improve cognitive performance and sleep during simulated night shifts versus dim control lighting.

Methods: Nineteen healthy participants (mean ± SD 29 ± 10 years, 12 males, 7 females) were recruited to a laboratory study consisting of two counterbalanced 8-day lighting conditions (order randomized) 1-month apart: (1) control lighting condition - dim, blue-depleted and (2) circadian-informed lighting condition - blue-enriched and blue-depleted where appropriate. Participants underwent an adaptation night (22:00-07:00 hours), then four nights of simulated night work (cognitive testing battery of nine tasks, 00:00-08:00 hours), and sleep during the day (10:00-19:00 hours). Psychomotor vigilance task (PVT) lapses, Karolinska Sleepiness Scale (KSS) scores, and polysomnography-derived sleep outcomes were compared between conditions and across days using mixed models. **Results:** Significant condition-by-day-by-time of task interaction effects were found for PVT lapses, median reaction time, and reaction speed, with ~50% fewer lapses by the end of simulated shift work with circadian-informed lighting versus control (mean ± SD 7.4 ± 5.0 vs. 15.6 ± 6.1). KSS was lower around the night shift midpoints on days 6 and 7 with circadian versus control lighting. Participants slept 52 minutes longer [95% CIs: 27.5, 76.5 minutes] by day 7 with circadian informed versus control lighting, $p < .001$. Effects were inconsistent on other performance tasks.

Conclusions: Circadian-informed lighting improved sleep, sleepiness, and vigilance compared to control lighting. These findings support the potential for lighting interventions to improve sleep and vigilance in night shift workers chronically exposed to dim lighting.

Scott et al. 2025.

Sleep, vol. 47, no. 11.

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Keywords: Circadian rhythm; light; sleep; sleepiness; work performance; work safety.

Evidence Level: 5A <https://pubmed.ncbi.nlm.nih.gov/39604205/>

Link: <https://academic.oup.com/sleep/article/47/11/zsae173/7724228?login=false>

Association between night shift work and the risk of type 2 diabetes mellitus: A cohort-based meta-analysis

Background: The impact of night shift work on the incidence of type 2 diabetes mellitus (T2DM) is not well understood. This meta-analysis assesses the association between night shift work and the risk of developing T2DM and explores this relationship across various subgroups. **Methods:** We systematically searched PubMed, Web of Science, EBSCO, and the Cochrane Library from their inception until February 2024. We employed hazard ratios (HR) and 95% confidence intervals (95%CI) to quantify the association between night shift work and T2DM risk. **Results:** Our analysis synthesized data from 9 articles encompassing 10 cohort studies. Overall, night shift workers exhibited a 30% increased incidence of T2DM compared to their daytime counterparts (HR = 1.30, 95% CI: [1.18, 1.43], $P < 0.001$). Among females, night shift workers had a higher incidence of T2DM (HR = 1.28, 95% CI: [1.16, 1.41]); however, in males, the association was not statistically significant (95% CI: [0.89, 2.63]). For individuals with a body mass index (BMI) $> 30 \text{ kg/m}^2$, night shift work was associated with an increased T2DM risk (HR = 1.14, $P = 0.007$), whereas there was no significant association for those with a BMI $\leq 30 \text{ kg/m}^2$ ($P = 0.255$). Further, the risk of T2DM increased with longer durations of night shift work; workers with more than 10 years of night shift work faced a higher T2DM risk than those with 10 years or fewer (HR for > 10 years = 1.17, 95% CI: [1.10, 1.24]; HR for ≤ 10 years = 1.06, 95% CI: [1.03, 1.10]). **Conclusion:** Findings suggest potential link between night shift work and T2DM risk. Longer durations of night shift work may increase the risk of T2DM. There may be gender differences (greater harm in women, but the male sample size is small) and obesity differences.

Xie et al. 2025.

BMC Endocrine Disorders, vol. 24, no. 1.

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Keywords: BMI; gender; meta-analysis; night shift work; Risk; Type 2 diabetes mellitus.

Evidence Level: 1B

Link: <https://bmcendocrdisord.biomedcentral.com/articles/10.1186/s12902-024-01808-w>

Management and Leadership

Research on occupational health and safety management in the context of big data

At present, with the rapid development of China's economy and industrial transformation, the situation of China's occupational health and safety is grim, and at this stage, there are still problems such as unsound laws and regulations and standard system, weak awareness of the primary responsibility of the enterprise, weak supervisory, technical capacity, and backward application of information technology. Based on the current situation of occupational health and safety management at home and abroad and relevant theories, this study adopts the method of systematic review and takes the evaluation of China's occupational health and safety management system as the theme and conducts a valuable exploration of the evaluation research of China's occupational health and safety management system, analyzes the current situation of occupational health and safety from the aspects of prevention and control of occupational diseases, prevention and control of safety accidents, and monitoring of the psychology of insecurity, and researches the two aspects of governmental regulation and social responsibility It analyzes the current situation of occupational health and safety from the aspects of prevention and control of occupational diseases, prevention and control of safety accidents and monitoring of unsafe psychology, and studies the current situation of post-performance evaluation of the development of OHS management system from the aspects of government supervision and social responsibility, aiming at providing

countermeasure suggestions for the sustainable development of OHS management system in China. The research indicates that in the context of the new economic normal, effectively safeguarding workers' occupational health rights and interests, promoting sustainable and robust economic and social development, as well as enhancing the sustainability of China's occupational health and safety management system have emerged as challenging yet pivotal areas for comprehensive exploration.

Hwang et al. 2025.

Frontiers in Public Health, vol. 12.

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Keywords: Big data; occupational disease prevention and control; occupational health and safety management system; safety management performance; sustainable development.

Evidence Level: 6B

Link: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2024.1514996/full>

Employer actions in office settings and women's perception of the workplace as supportive of healthy eating: A cross-sectional pilot study

Background/objectives: This study aimed to evaluate how women working in office environments perceive their workplace as promoting healthy eating behaviors through employer-led actions. **Methods:** This cross-sectional study was conducted among 230 professionally active women employed in office settings in Poland. Data were collected using the Computer-Assisted Web Interview (CAWI) method. Participants were divided into two groups based on their perceived level of workplace support for healthy eating behaviors, as measured by the Workplace Healthy Eating Scale. Group 1 (n = 125; 54.3%; mean score = 15.69, SD = 3.76) and Group 2 (n = 105; 45.7%; mean score = 29.88, SD = 5.15) reflected low and high perceived support, respectively. **Results:** A linear regression model was employed to assess the association between the perceived level of support and specific workplace initiatives, including access to fresh fruits and vegetables, meal preparation facilities, cafeteria usage, lectures on nutrition, cooking workshops, and individual dietary consultations. For Group 1, access to fresh fruits and vegetables was the only factor significantly associated with a positive perception of the workplace as promoting healthy eating ($p = 0.003$), explaining 6.5% of the variance (adjusted $R^2 = 0.065$). In Group 2, both access to fresh produce and participation in cooking workshops were significantly associated with positive workplace perceptions ($p < 0.001$), explaining 41% of the variance (adjusted $R^2 = 0.410$). **Conclusions:** Access to fresh produce is a key determinant of employees' perceptions of workplace support for healthy eating behaviors, with a notably greater impact observed when combined with additional activities such as cooking workshops. Employer-led initiatives focusing on practical dietary engagement appear to be effective in enhancing workplace perceptions of health promotion.

Hyży et al. 2025.

Nutrients, vol. 16, no. 21.

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Keywords: Dietary habits; health promotion; nutrition; office workers; women's health; workplace environment.

Evidence Level: 4B

Link: <https://www.mdpi.com/2072-6643/16/21/3766>

The interplay among environmental sensitivity, job stressors, and leadership styles on employee well-being

Investigating the role of individual differences in Environmental Sensitivity for well-being and stress at work is an emerging area of research with significant potential for practical implications in organizational management and human resources. Recent studies have begun to explore how individuals with high sensory-processing sensitivity (SPS) may be more vulnerable to work-related stress than their less sensitive peers, but may also derive greater benefits from positive job resources when available. The present study aims to investigate the role of leadership style in the complex interplay between individual differences in sensitivity, stress at work, and general well-being. A questionnaire was administered through Qualtrics to a total of 317 workers from two medium-large-sized Italian companies, across two waves between May and July 2022. Findings provided support for a three-way interaction effect, with job stressors exerting an

adverse effect on participants' well-being, mitigated by democratic and let-it-be leadership styles at the team level, particularly among highly sensitive individuals. Thus, our findings suggest a vantage sensitivity effect and underscore the importance of cultivating positive work climates to enhance workers' ability to cope with stressors and improve their global well-being, with particular relevance for highly sensitive individuals.

Onesti et al. 2025.

Scientific Reports, vol. 14, no. 1.

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Keywords: Environmental sensitivity; job stressors; leadership styles; organizational management; well-being.

Evidence Level: 4B

Link: <https://medpr.imp.lodz.pl/Occupational-anaphylaxis-to-food,195218,0,2.html>

Work Ability

Relationship between psychosocial factors and work capacity of healthcare professionals

Objective: To analyse the relationship between work ability and psychosocial factors of professionals from the healthcare area. **Method:** Cross-sectional study with 197 healthcare professionals from a teaching hospital. The Work Ability Index and the Copenhagen Psychosocial Questionnaire III were applied. For data analysis, association tests and logistic regression models were used. **Results:** Most participants were female (60.9%) with an average age of 40.12±7.14 years. The participants' good/optimal ability to work was 75.1%. The independent factors associated with work ability were recognition, self-rated health, somatic stress, leisure, commitment to time and interaction between work commitment and physical activity.

Conclusion: There was a reduction in the good/optimal work capacity of professionals who worked on the front line of care during the COVID-19 pandemic, with frequent exposure to psychosocial risks at work and of those who did not practice physical and leisure activities.

Santos et al. 2025.

Revista Gaúcha de Enfermagem, vol. 45.

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Keywords: Psychosocial; work capacity; healthcare professionals.

Evidence Level: 4B

Link: <https://www.scielo.br/j/rgenf/a/LnZ7FvxmxJwCK5VYtGHq7Mn/?lang=en>

Understanding the professional factors that impact the retention of pathology workers in regional, rural and remote Australia

Objective: The objective of this study was to determine what professional factors impact the retention of pathology workers in regional, rural and remote Australia. **Design:** A cross-sectional survey was used to collect data regarding the professional factors that impact the retention of regional, rural and remote pathology workers in Australia (n = 95). The survey focused on pathology workers' satisfaction with specific professional factors and how long they intended to stay in their current position. **Setting:** Regional, rural and remote (MM2-7) pathology laboratories in Australia. **Participants:** There were a total of 95 participants, including 24 phlebotomists/laboratory assistants, 34 medical laboratory scientists and 29 supervisors/managers, with the majority of participants being from New South Wales, Queensland and Western Australia. **Results:** Significant positive associations were found between satisfaction with career advancement opportunities, workplace culture and maintaining professional skills with the retention of regional, rural and remote pathology workers. Open-ended responses indicated that personal factors also played an important role in pathology worker retention in regional, rural and remote communities.

Conclusion: This study provides important insights into the professional factors that impact the retention of pathology workers in regional, rural and remote Australia. Personal factors were also found to play an important role in retention. These findings have highlighted the need for further research to be conducted to explore the relationship between professional and personal factors and how this impacts the retention of pathology workers in regional, rural and remote Australia.

Werth et al. 2025.

The Australian Journal of Rural Health, vol. 32, no. 6.

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Keywords: Australia; health care; pathology worker; retention; workforce.

Evidence Level: 4A

Link: <https://onlinelibrary.wiley.com/doi/10.1111/ajr.13191>

Occupational adjustments and work ability of young adult cancer survivors: Results from the AYA-Leipzig study

Purpose: Adolescent and young adult cancer survivors (AYA-CS) face a long working life after treatment, yet factors related to a successful return to work remain largely unexplored. We therefore aimed to investigate the use of occupational adjustments and their impact on work ability upon return to work. **Methods:** As part of the AYA-LE study, we surveyed AYA-CS (aged 18-39 at diagnosis) who returned to work and assessed work ability (Work Ability Index) as well as use and benefit of occupational adjustments. We analysed predictors of use and benefit of occupational adjustments on average 4 years post-diagnosis using multivariate linear and logistic regression. **Results:** Out of 438 AYA-CS, 389 (88.8%) returned to work after cancer diagnosis and were included in analyses. Mean work ability was $M = 36.2$ ($SD = 6.9$), 11.4% reported poor, 34.7% moderate, 41.4% good and 12.5% excellent work ability. Following treatment, 82.3% used occupational adjustments, most frequently: flexible working hours, gradual reintegration and reduced working hours. The probability of a reduction in working hours was found to be higher among older AYA-CS (≥ 30), female gender and with a fatigue index ≥ 11 ($R^2 = 0.073$). A fatigue index < 11 , elevated levels of pain and the presence of metastases/recurrence were associated with a lower benefit of reduced working hours ($R^2 = 0.183$). Younger age (< 30) and stem cell transplant were associated with a lower benefit of support from colleagues ($R^2 = 0.077$). **Conclusion:** Our results highlight the need for targeted occupational counselling throughout the treatment and even beyond the return-to-work process, considering individual and social factors.

Brock et al. 2025.

Journal of Cancer Research and Clinical Oncology, vol. 151, no. 1.

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Keywords: Adolescent and young adult; cancer; occupational adjustments; psycho-oncology; return to work; work ability.

Evidence Level: 4B

Link: <https://link.springer.com/article/10.1007/s00432-024-06050-4>

Sustainable employability and work outcomes: A prospective study

Background: In recent years, sustainable employability, rooted in the capability approach, has received substantial attention due to its associations with work and health-related outcomes. While previous studies have indicated that being able and enabled to achieve important work values (i.e., work capabilities) is positively associated with desirable work outcomes, most of these studies have primarily employed a cross-sectional design to explore these associations. This study aimed to examine the long-term relationships between work capabilities and work and wellbeing-related outcomes, including work ability, work engagement, task and creative performance, organizational citizenship behaviour, organizational commitment, job and life satisfaction, turnover intention, and burnout symptoms. **Methods:** Data were collected from 251 randomly selected Dutch employees through a two-wave survey conducted in 2021 and 2023 via the Longitudinal Internet Studies for the Social Sciences panel. Multiple linear regression analyses were performed to assess these associations while controlling for potential covariates. **Results:** The results revealed that participants valued a diverse range of work capabilities but encountered challenges in realizing these valued capabilities. The capability set positively predicted desirable outcomes and was associated with reduced burnout over a two-year period. **Conclusions:** Supporting and enabling employees to realize their capabilities is essential for improving favorable work outcomes and diminishing burnout in today's volatile work environment. These findings further emphasize the importance of organizations improving conversion factors to bridge the gap between valued capabilities and their actualization.

Gürbüz et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: Capability approach; capability set; sustainable employability; wellbeing; work engagement; work-related outcomes.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20576-9>

Adult work ability following diagnosis of bacterial meningitis in childhood

Importance: A diagnosis of bacterial meningitis in childhood can lead to permanent neurological disabilities. Few studies have examined long-term consequences for work ability in adulthood.

Objective: To compare earnings, work loss, and educational attainment between adults diagnosed with bacterial meningitis in childhood and population comparators. **Design, setting, and participants:** This nationwide registry-based matched cohort study included individuals in Sweden diagnosed with bacterial meningitis in childhood (aged <18 years) from January 1, 1987, to December 31, 2019, and general population comparators matched 1:9 on age, sex, and place of residence. Follow-up was completed December 31, 2020. Data were analysed from February 7 to September 12, 2023. **Exposure:** A diagnosis of bacterial meningitis in childhood recorded in the National Patient Register. **Main outcomes and measures:** Annual taxable earnings (in 2020 US dollars), work loss (sum of sick leave and disability insurance), and educational attainment. **Results:** The cohort included 2534 individuals diagnosed with bacterial meningitis in childhood (mean [SD] age at diagnosis, 4.7 [5.3] years) and 22 806 comparators (13 510 [53.3%] male). Among those with childhood bacterial meningitis, 812 (32.0%) were diagnosed at younger than 1 year and 1351 (53.3%) were male. From 18 to 34 years of age, those with childhood meningitis had lower adjusted earnings relative to comparators and higher adjusted work loss. When pooling observations for individuals 28 years or older, the annual mean reduction in earnings was -\$1295 (95% CI, -\$2587 to -\$4), representing a 4.0% (95% CI, 0%-8.0%) reduction relative to comparators, and the annual increase in work loss was 13.5 (95% CI, 8.6-18.5) days. There was a larger reduction in earnings for those with childhood meningitis relative to comparators with pneumococcal (*Streptococcus pneumoniae*) vs meningococcal (*Neisseria meningitidis*) meningitis. For work loss, there was a difference among all 3 major causes of meningitis, with the largest increase for pneumococcal meningitis. Individuals diagnosed at a younger age (below the median) had lower earnings relative to comparators and higher work loss than individuals diagnosed at an older age (above the median). Fewer individuals with childhood meningitis relative to comparators had obtained a high school degree at age 30 years (adjusted odds ratio, 0.68 [95% CI, 0.56-0.81]). **Conclusions and relevance:** In this cohort study of adults diagnosed with bacterial meningitis in childhood, findings suggest that work ability decreases relative to population comparators, with lower earnings and higher work loss, especially among adults diagnosed with pneumococcal meningitis or diagnosed at a young age, with long-lasting costs for the individual patient and society at large.

Mohanty et al. 2025.

JAMA Network Open, vol. 7, no. 12.

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Keywords: Bacterial meningitis; childhood; adult; work ability.

Evidence Level: 4B

Link: <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2827191>

Adapting to the Future of Work

Aging Workforce

Facilitators and barriers for working beyond statutory pension age: A prospective cohort study across 26 European countries

Objective: The aging population of European countries highlights the need for extended working lives. This study aims to investigate facilitators and barriers for working beyond the statutory pension age (SPA).

Methods: Using data from waves 1, 2, 4-9 of the Survey of Health, Ageing and Retirement in Europe (SHARE) (2004-2022), we followed 9131 workers with a mean age of 56.9 [standard deviation (SD) 3.5] years from 26 European countries until they surpassed the SPA for their respective country, sex and year of participation. Using robust Poisson regression, we modelled the prospective association of work factors, lifestyle, health, and demographics at baseline with working at least one year beyond the SPA.

Results: Participants were followed for 9.5 (SD 3.9) years. After surpassing the SPA by at least one year, 18% were still working. Among the work factors, opportunities for skill development [risk ratio (RR) 1.20, 95% confidence interval (CI) 1.07-1.34] and recognition at work (RR 1.13, 95% CI 1.01-1.26) facilitated working beyond SPA, while time pressure (RR 0.89, 95% CI 0.81-0.97) and poor prospects for job advancement (RR 0.76, 95% CI 0.70-0.83) were barriers. For the other factors, smoking was negatively associated with working beyond the SPA, while living in the northern part of Europe, higher level of education, and being divorced or separated were positively associated with working beyond the SPA.

Conclusion: This prospective cohort study across 26 European countries identified four modifiable work factors that influenced working beyond the SPA. Addressing modifiable barriers and facilitators at the workplace and through public health initiatives could help extend working lives in Europe.

Andersen et al. 2025.

Scandinavian Journal of Work Environment and Health, vol. 50, no. 8.

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Keywords: Barriers; pension age.

Evidence Level: 4B

Link: <https://www.sjweh.fi/article/4189>

Does the health of local populations modify occupational differences in employment rates of older workers? Findings from the ONS Longitudinal Study 2001-2011

Poor health is a key reason for early exit from the labour market. Few studies have explored how the health of local populations is related to occupational differences in employment outcomes among older people. Our study used data for England and Wales from the ONS Longitudinal Study linked with 2001 Census measures of the health of the older working age population at local authority level. We included 128,710 people aged 40-64y in 2001 who were in paid work in the previous five years. We investigated the associations of both occupation and area level with two employment outcomes ten years later (in 2011): i) in paid work or not; ii) economic activity (employed (reference), unemployed, retired, sick/disabled, other). People in elementary occupations were more likely to not be in paid work in 2011 compared to those in managerial occupations (RRR 1.55 [95%CI 1.47,1.64]). Compared to the healthiest third of local authority areas, being resident in the unhealthiest third was associated with greater likelihood of not being in paid employment ten years later (RRR 1.25 [95% CI 1.18,1.33]). While area level health was associated with employment outcomes for all major occupation groups, the gap between the healthiest and unhealthiest areas was most marked for skilled trades; process, plant and machine operatives; and elementary occupations. Occupational differences for the economic activity outcome were most marked for the sick/disabled category. Policies to improve the health of local populations may support retention and reduce occupational inequalities in employment rates of older workers.

Head et al. 2025.

Health & Place, vol. 90.

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Keywords: Employment rates; occupation; older workers.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S1353829224002041?via%3Dihub>

Technology

The internet of things deployed for occupational health and safety purposes: A qualitative study of opportunities and ethical issues

The deployment of the Internet of Things (IoT) technology (connected devices enabling algorithmic analysis of behaviour and individualized feedback) has been growing increasingly over the last decades, including in the workplace where they can serve occupational safety and health (OSH) purposes. However, although the IoT is deployed for good aims, the use of these devices raises numerous ethical issues which have had little literature specifically dedicated to them. To fill this gap, we have investigated the ethical views of key stakeholders on the deployment of IoT for OSH. We conducted a focus group and semi-structured interviews including 24 stakeholders and analysed transcripts with an open coding method. Participants were favourably disposed towards the use of some versions of IoT (posture-tracker chair, step-tracker watch), but rejected other devices (sound-tracker on computer). They highlighted an important number of ethical issues which could be grouped into five overarching categories: goal relevance, adverse side effects, role of employees, data process, and vagueness. Their inputs were remarkably coherent with the issues highlighted in the academic literature. They also felt quite disenchanted and shed a stark light on the lack of information at the disposal of stakeholders in the front line to assess such technology. Our results provide important ground material on which to base necessary and still-awaited guidelines and regulation instruments.

Bouchikhi et al. 2025.

PLoS One, vol. 19, no. 12.

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Keywords: Occupational health and safety; internet; ethnics.

Evidence Level: 5B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0315671>

Cross-sectional analysis of the association between information and communication technology and mental health among Korean workers

Background: The adoption of information and communication technology (ICT) has been the fastest and most widespread in the South Korean workplace. While ICT has several advantages, it can also cause stress among workers. However, the relationship between the introduction of ICT in the workplace and mental health problems among Korean workers remains unclear. **Methods:** We conducted a cross-sectional analysis of data obtained from the sixth Korean Working Conditions Survey (KWCS). In total, 40,019 participants answered a question about whether ICT had been introduced in their workplace. Among these, we compared the rate of complaints of mental health disorders between those who answered "yes" (n = 3,250) and those who answered "no" (n = 36,769). We analyzed the data using the SAS statistical software and calculated the odds ratios (ORs) and 95% confidence intervals (95% CIs) for anxiety, insomnia, and depression using multiple logistic regression models. We also stratified the data on Korean workers to assess the impact of ICT on subgroups. **Results:** In our nationally representative cohort, on experiencing ICT incorporation at work, 384 participants (11.8%) reported anxiety, 138 (4.2%) reported insomnia, and 296 (9.1%) reported depression. In contrast, among participants who did not have access to ICT, 1,929 (5.2%) reported anxiety, 702 (1.9%) reported insomnia, and 4,404 (12.0%) reported depression. The ORs (95% CIs) for anxiety and insomnia complaint rates were 2.47 (2.19-2.79) and 2.55 (2.10-3.10), respectively, among workers who experienced new ICT adaptations in comparison with those who did not. However, no significant relationship was observed between ICT adoption and depression. **Conclusions:** The causes of mental health problems in the workplace should be identified and addressed. We found that the introduction of ICT in the workplace was significantly related to anxiety and insomnia symptoms among Korean workers, after controlling for the selected covariates. This information can be used to identify subgroups in the workplace that are vulnerable to ICT changes and tailor interventions to their social and demographic profiles.

Shin et al. 2025.

PLoS One, vol. 19, no. 11.

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Keywords: Information; communication technology; mental health; Korean workers.

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0310248>

Work Environment

Challenges of modern work environments and means of overcoming them in the context of psychosocial risk assessments

Background: Modern work environments constitute an underrepresented part of psychosocial risk assessments at work. Little is known about whether there is an increased stress load at all and what possible improvements could be made in such a case. **Methods:** Modern work environments were assessed in an online questionnaire in 33 companies across a period of more than 4 years. A total of 3431 employees participated in the study. Both quantitative and qualitative data was applied to obtain a differentiated picture. **Results:** Increased stress caused by modern work environments was an issue for around a third of the sample. 31.6% of the participants at least sometimes struggled to balance work and private life. Quite a few of the participants (36.3%) worked sometimes or more outside regular working hours. For 32.4% of participants, the workload has increased due to new technologies, but for 30.4% it has not. The majority (81.4%) feel they can work productively in home offices. The data from 178 completed free text fields on improving modern work environments from the employees' perspective was analysed. Many named suggestions relate to improvements in time management. **Conclusion:** This study provides both detailed insights into various aspects of modern work environments and offers solutions to counteract possible negative consequences. Assessing modern work environments in psychosocial risk assessments would be a valuable addition to its completeness.

Pavlista et al. 2025.

BMC Public Health, vol. 24, no. 1.

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Keywords: Employee wellbeing; mental health; modern work environments; new work; occupational measures; psychosocial risk assessment.

Evidence Level: 5B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20818-w>